Wine bacteria
selected from nature

LALVIN SILKA™

Oenococcus oeni

MBR™ process
direct inoculation

For silky red wines and malolactic fermentation with oak

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direct inoculation

As a producer of wine lactic acid bacteria, Lallemand developed a specific MBR™ production process that subjects the wine bacteria cells to various biophysical stresses, making them able to withstand the rigors of direct addition to wine. The conditioned MBR™ lactic acid bacteria that survive are robust and possess the ability to conduct reliable malolactic fermentation (MLF).

DESCRIPTION

LALVIN SILKA™ was isolated from nature in La Rioja in Spain. It was selected by Instituto de Ciencias de la Vid y del Vino (Institute of Grapevine and Wine Sciences) (ICVV), from a 2006 research project. Over 1000 natural isolates from different wineries were studied and LALVIN SILKA™ was selected for its unique sensory properties especially for regions with warm climate challenges.

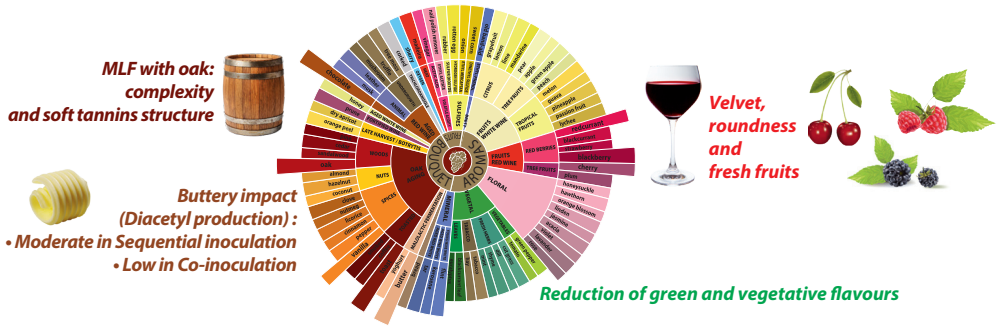
Produced with our MBR process, LALVIN SILKA™ is able to survive and grow after inoculation in wines or in must, and achieve a regular MLF.

BENEFITS & RESULTS

Beyond deacidification, LALVIN SILKA™ is best suited to produce silky red wines with an easy-to-use protocol (direct inoculation without any rehydration step).

LALVIN SILKA™ brings a positive impact on the roundness, softening the astringency and bitterness of wines, which results in complex very well-balanced red wines, with a nice aromatic persistency.

LALVIN SILKA™ softens tannins and is thus well suited for MLF in contact with oak. The resulting wines have better integrated oak sensation, with an elegant structure and a highest aromatic freshness. After several months, the wines are still fruity and fresh.



LALVIN SILKA™ is a bio-protection tool to protect wines against *Brettanomyces* when inoculated as soon as possible to prevent the excessive development of the spoilage yeast.

PROPERTIES

- pH tolerance: ≥ 3.3
- Alcohol tolerance: up to 16 % vol.
- SO_2 tolerance: up to 60 mg/L total SO_2 (pay attention to molecular SO_2 in the lower pH range)
- T° tolerance: > 15 °C
- MLF kinetic: regular
- Low volatile acidity production
- Bacteria cinnamoyl esterase negative: cannot produce precursors for volatile phenol production by *Brettanomyces*
- No production of biogenic amines
- Suited for co-inoculation and sequential inoculation
- Nutritional demand: moderate - it's recommended to add ML REDBOOST™ in post alcoholic fermentation inoculation

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INSTRUCTIONS FOR OENOLOGICAL USE

Use one sachet for right quantity of hL indicated on label. Lowering the dosage or doing cross seeding or pitching methods will reduce the bacteria performance.

Co-inoculation (simultaneous alcoholic fermentation)

1. Yeast addition

Rehydrate the selected dry yeast according to the instructions. Preferably in presence of a rehydration nutrient and inoculate the must.

2. Bacteria addition

Depending on the SO_2 addition at crush:

- SO_2 addition < 5 g/hL: wait for 24 hours
- SO_2 addition 5-8 g/hL: wait for 48 hours

- Direct inoculation of bacteria without rehydration: open the sachet and add the bacteria directly to the must/wine to be fermented from the top of the tank (white must) or during a pumping-over (red must).
- Direct inoculation with rehydration step: for best distribution, you can rehydrate the packet of freeze-dried lactic acid bacteria in 20 times its weight of clean chlorine free water at 20°C for a maximum of 15 minutes and add the suspension to the must/wine to be fermented.
  - Assure a good distribution.
  - Carefully monitor must temperature, which must be below 30 °C at lactic acid bacteria inoculation (alcohol < 5 % vol.) and below 27 °C when the level of 10 % alcohol is reached.
  - Complex nutrients addition at 1/3rd of alcoholic fermentation is recommended.
  - Monitor malic acid and volatile acidity.
  - Top the wine after alcoholic fermentation (AF).
  - Otherwise rack and stabilize after MLF.

Sequential inoculation (post-alcoholic fermentation)

Bacteria inoculation: two options

- Direct inoculation without rehydration: open the sachet and add the bacteria directly into the wine after the end of alcoholic fermentation at the top of the tank or while emptying the tank.
- Direct inoculation with rehydration step: for best distribution, you can rehydrate the packet of freeze-dried selected wine bacteria in 20 times its weight of clean chlorine free water at 20 °C for a maximum 15 minutes. Add this suspension directly to the wine towards the end of the alcoholic fermentation.
  - Stir gently to evenly distribute the selected wine bacteria and minimize the oxygen pickup.
  - Under more difficult conditions, add a specific bacteria nutrient.
  - Monitor malolactic fermentation activity (malic acid degradation) every 2 to 4 days.
  - Stabilize wine once malolactic fermentation (MLF) is finished.

Recommended temperatures ranges:

- Red wine:
  - › If alcohol < 14.5% vol.: from 17 to 25 °C, with an optimal range: 18-22 °C
  - › If alcohol > 14.5% vol.: from 18 to 20 °C

PACKAGING & STORAGE

- Product in powder form obtained by lyophilization.
- Available in different dosages for 2.5 hL (66 US gal.), for 25 hL (660 US gal.), for 100 hL (2,641 US gal.)
- Once opened, lactic acid bacteria sachet must be used immediately.
- This product can be stored for 18 months at 4 °C/40 °F or 36 months at -18 °C/0 °F in original sealed packaging.
- Sealed packets can be delivered and stored for 3 weeks at ambient temperature (<25 °C/77 °F) without significant loss of viability.

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