

VITILACTIC® H⁺

Strain *Oenococcus oeni* selected by the *Institut Français de la Vigne et du Vin* (IFV) of Beaune.

To implement a malolactic fermentation under difficult conditions: for white or rosé wines with a low pH, low temperature fermentations (optimum temperature between 16 and 18°C) and red wines with high alcohol level.



VITILACTIC® H⁺ is a malolactic starter kit containing selected and freeze-dried *Oenococcus oeni* bacteria and its specific activator. When used following the simple acclimatization protocol called 1-STEP® (developed by Lallemant), this combination of activator and bacteria allows for malolactic fermentation under extreme conditions (pH and temperature).

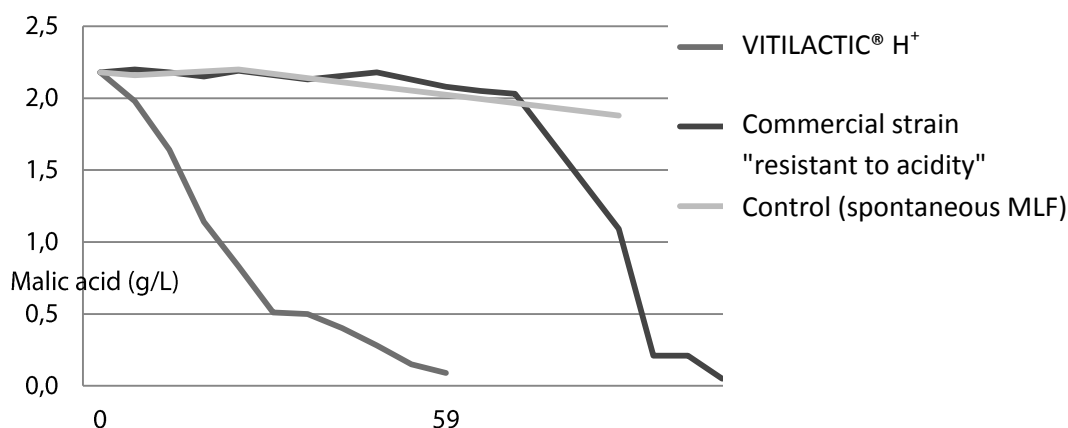
Malolactic fermentation is a crucial stage in the winemaking process because it de-acidifies the wine, and it has also been consistently proven to enhance wine quality. Choosing the right lactic bacteria is therefore vital, and that is why we strive to develop bacterial preparations adapted to different wine conditions and desired wine profiles.

-- APPLICATIONS --

Isolated from a low pH Chardonnay (Burgundy), VITILACTIC® H⁺ was selected for its capacity to adapt to the difficult conditions found in white and rosé wines of the Northern Hemisphere and to implement fast and secure malolactic fermentations. Its resistance to low temperatures (> 13°C) ensures good malolactic fermentation kinetics, which minimize the heating up of wine storehouses. It also acclimatizes very well, and therefore is appropriate for malolactic fermentation in red wines with high alcohol contents.

In this case, the optimum fermentation temperature of VITILACTIC® H⁺ is between 16 and 18°C.

MLF kinetics : degradation of malic acid in a Chardonnay 2009 (pH 3.2 - 12,8 % vol. - malic acid 2.2 g/L)



Comparison between **VITILACTIC® H⁺**, a reference biomass, and a non-inoculated control group used on a Chardonnay 2009 at 16°C. Experimental results IFV (France).

-- MICROBIOLOGICAL AND OENOLOGICAL PROPERTIES --

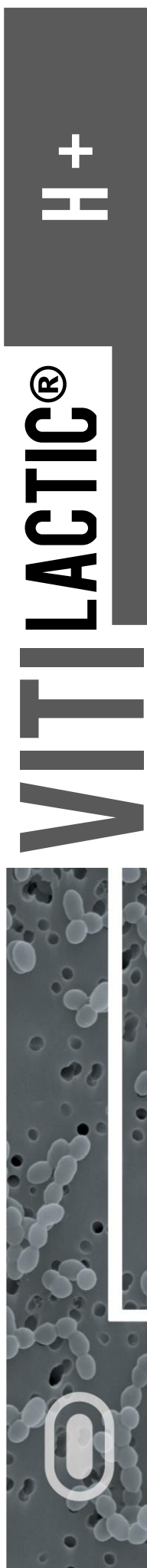
- Capacity for adapting to wines presenting low pH > 3.
- MLF temperature > 13 °C, with an optimal performance between 16 and 18°C.
- Tolerance to alcohol: up to 16% vol.
- pH: above or equal to 3.
- Total SO₂ levels < 45 mg/L and free SO₂ < 10 mg/L. It is important to evaluate the SO₂ levels in the musts and wine before bacterial inoculation. When pH levels are low, SO₂ in molecular form (which has an inhibitory effect on bacteria) is present in larger quantities.
- Low production of biogenic amines.
- Very low production of volatile acidity.
- "Phenol negative" bacteria, which means that **VITILACTIC® H⁺** cannot degrade coumaric acid into coumaric acid which is the origin of volatile phenol precursors responsible for the development of the off-odors associated with *Brettanomyces bruxellensis*.
- Maintains a freshness of aroma and the organoleptic quality of the wines

-- INSTRUCTIONS FOR USE WITH EARLY INOCULATION (DENSITY OF 1020-1010) OR WITH SEQUENTIAL INOCULATION (POST AF) --

This protocol is determined for the inoculation of 50 hL of wine, using the complete **VITILACTIC® H⁺** malolactic inoculation kit (dose for 50 hL).

1/ Rehydration phase

- Dilute the contents of the **reactivator VITILACTIC® H⁺** sachet in 5 L of clean chlorine-free water (temperature between 17 and 25°C).
- Add and carefully dilute the contents of the sachet in the above mixture. Wait for 20 minutes maximum.



2/ Acclimatisation phase

- Carefully mix the rehydrated VITLACTIC® H⁺ preparation following phase 1/ in 5 litres of fermenting must/wine with a pH >3.5.

Increasing wine pH levels to 3.5 during the acclimatization phase is a crucial step. It ensures better acclimatization, increased bacterial growth, and reduces lag times before the start of MLF.

- Leave the inoculation to acclimatise at a temperature between 17 and 21°C for 18 to 24 h. If malic acid content is < 1.2 g/L, wait only for 8 to 12 hours.

3/ Transfer to tank

- Incorporate the inoculation into 50 hL of fermenting wine to be inoculated.
- These are the recommended temperature ranges for malolactic fermentation:
 - White wines: 16°C to 20°C. However, for white wines with low pH levels (< 3.1), high alcohol levels (> 14.5% vol.), or SO₂ levels > 45 mg/L, it is highly recommended that temperatures be maintained at roughly 16°C to 18°C.
 - Red wines: 17°C to 25°C. However, for white wines with low pH levels (< 3.1), high alcohol levels (> 14.5% vol.), or SO₂ levels > 45 mg/L, it is highly recommended that temperatures be maintained at roughly 18°C to 20°C.

To meet the nutritional requirements of VITLACTIC® H⁺, add 20 g/hL of malolactic fermentation starter to the inoculated tank (**MALOVIT®** for red wines and **MALOVIT® B** for white wines).

- Regularly evaluate malolactic fermentation (perform an analysis of malic acid every 2 to 4 days).

-- INSTRUCTIONS FOR USE IN CO-INOCULATION ON MUST (ADDITION OF BACTERIA FROM 24 TO 48H AFTER YEAST ADDITION) --

This instruction for use is valid under the following conditions: pH > 3.4 - content of total SO₂ grape/ must < 8g/hL - alcohol < 15% vol. - temperature < 27°C – appropriate yeast inoculation and nutrition.

- Mix and dissolve content of the activator sachet in 5 liters of drinking water (temperature between of 17 and 25°C).
- Add content of the bacteria sachet and dissolve carefully by gentle stirring. Wait for 2 hours maximum.
- Then, transfer the rehydrated mix into the fermenting tank.
 - 24h after yeast addition, if the total SO₂ content is < 4g/hL.
 - 48h after yeast addition, if the total SO₂ content is < 8g/hL.
- Insure a good distribution of bacterias in the tank.
- Check MLF activity (malic acid degradation every 2-4 days) and volatile acidity.

-- PACKAGING --

Dosis for 50 hL.

-- STORAGE AND TRANSPORT --

Store unopened original package:

- 18 months at 4°C.
- 36 months at -18°C.

Once opened, use rapidly.

Can withstand several days at room temperature.

The quality of the **VITILACTIC® H⁺** is preserved if the product is stored at room temperature at a temperature below 25°C during 1 week. Similarly, their quality is not affected by temperature variations during transport provided that their frequency and intensity are limited:

- Do not expose the product at a temperature above 30°C.
- Limit the number of temperature peaks between 25 and 30°C.

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