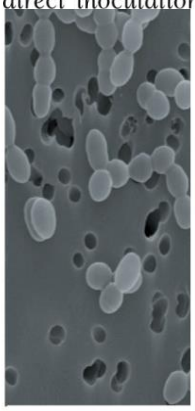
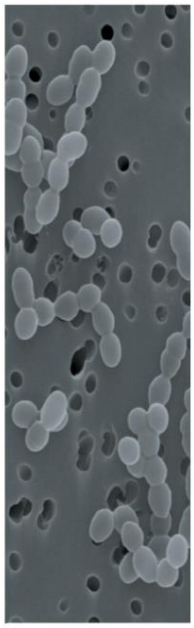
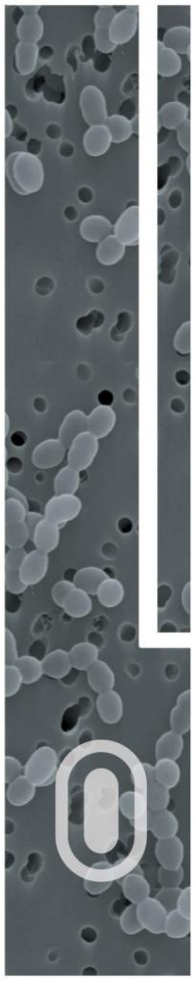
MBR® process
direct inoculation







VITILACTIC® F

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

Lactic acid bacteria for direct inoculation for expressive and well balanced red, white and rosé wines. Tested and approved for "yeast-bacteria" co-inoculation.

Good adaptation to low pH values or low temperatures.

Good resistance to wines with strong tannic structure.

MBR®

VITILACTIC® F is produced following the specific MBR® process, which enhances its resistance to wine conditions when used for direct inoculation or after a short rehydration phase, and makes it remarkably stable during storage.

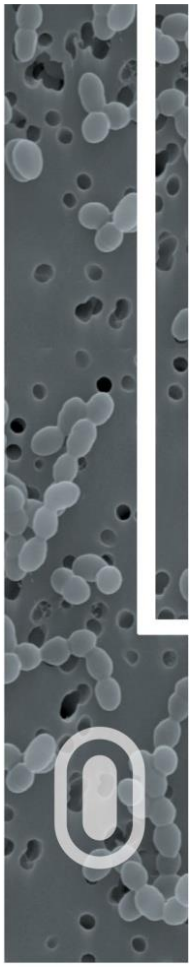
Malolactic fermentation is a crucial stage in the winemaking process because it de-acidifies the wine, and it has also been consistently proven to enhance wine quality. Choosing the right lactic acid bacteria is therefore vital, and that is why we strive to develop bacterial preparations adapted to different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

VITILACTIC® F is particularly recommended for malolactic fermentation in white and rosé wines under relatively challenging conditions (pH values from 3.2 and temperatures from 16°C) as well as for producing fruity red wines, medium to strongly structured wines.

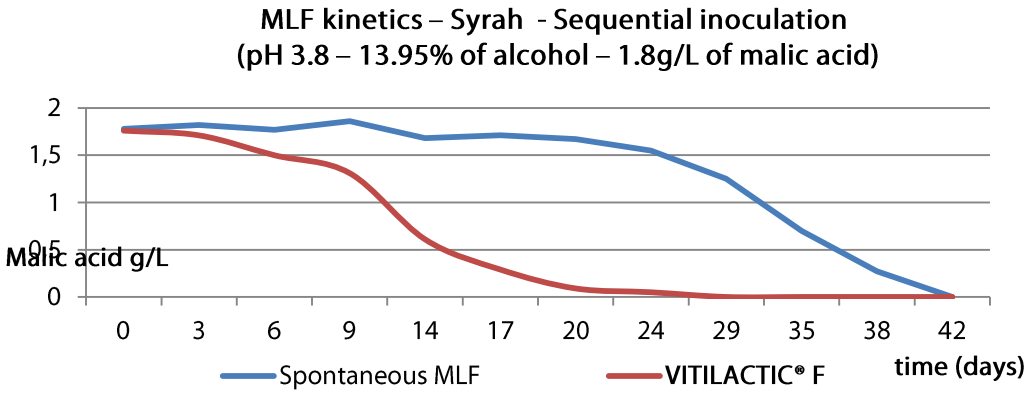
--- MICROBIOLOGICAL AND OENOLOGICAL PROPERTIES ---

- Ability to acclimatize to wines with pH values ≥ 3.2.
- Malolactic fermentation temperature: ≥ 16°C.
- Tolerates alcohol levels of up to 14% vol. When producing red wine, if the only inhibiting factor is the alcoholic content of the environment, **VITILACTIC® F** can tolerate an alcoholic strength by volume of 15%.
- Tolerates total SO_2 levels < 50 mg/L and free SO_2 levels < 10 mg/L. It is important to evaluate the SO_2 levels in the must and wine before bacterial inoculation. When pH levels are low, SO_2 in molecular form (which has an inhibitory effect on bacteria) is present in larger quantities.

VITILACTIC® F

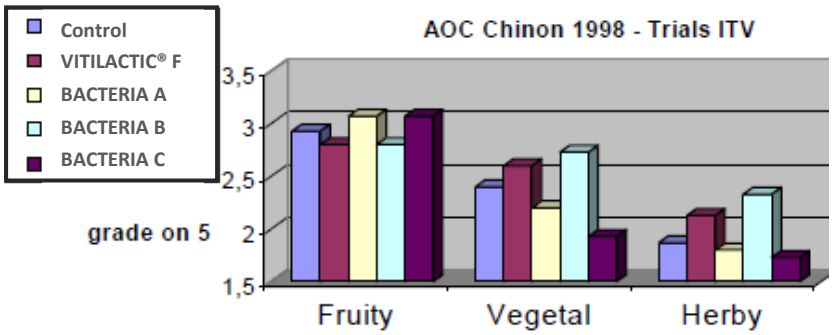


- Low production of biogenic amines.
- Low to very moderate diacetyl production.
- Low production of volatile acidity.
- "Phenol negative" bacteria, which means that **VITILACTIC® F** cannot degrade coutaric acid into coumaric acid which is the origin of volatile phenol precursors responsible for the development of the off-odors associated with *Brettanomyces bruxellensis*.
- Suitable for all three inoculation times: co-inoculation, early inoculation, and sequential inoculation.



VITILACTIC® F enhances the organoleptic profile of wines:

- Minimizes loss of colour during malolactic fermentation at low temperatures.
- Diminishes the vegetal and herbaceous character of wines to bring out the varietal and fruity aromas.
- Enhances the roundness and mouth-feel of wines.



--- INSTRUCTIONS FOR USE ---

Direct inoculation (without rehydration) is possible:

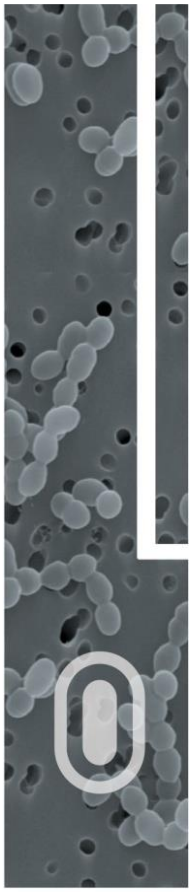
- Open the sachet and add the **VITILACTIC® F** without rehydration prior to or during a pumping-over:
  - directly into the fermenting must during a pumping-over (co-inoculation)
  - or directly into the wine after the end of alcoholic fermentation (AF) (post AF-fermentation)

For a best mixing, we recommend to:

- Add **VITILACTIC® F** to 20 times its weight of clean chlorine-free water at 20°C.
- Stir. Rehydrate maximum 15 minutes.

*Example: A 25 g sachet of **VITILACTIC® F** for 25hL is rehydrated in 500 mL of water.*

VITILACTIC® F



The instructions for use of this bacteria depends on the type of inoculation. 3 options:

<u>Option 1 and 2</u> - Sequential inoculation (post alcoholic-fermentation) or early inoculation (density 1020–1010):

- Add directly to the wine tank (using the pumping-over method without aeration or homogenization with a nitrogen addition), or to the fermenting wine.
- Maintain temperature between 16°C and 18°C for white and rosé wines, and between 18°C and 22°C for red wines.
- If the wine presents challenging conditions (overclarified wines, low pH values, high SO_2 and alcohol level, organic nitrogen deficiency, fermentation problems,…):
  - Rehydrate **VITILACTIC® F** with the bio-reactivator PRE-LACTIC (20 g/hL of wines to inoculate).
  - Then add 20 g/hL of MALOVIT® for reds, or 20 g/hL of MALOVIT® B for white and rosé wines, before inoculation with **VITILACTIC® F**.

<u>Option 3</u> - Co-inoculation in must (inoculation of bacteria 24 to 48 hours after addition of yeast):

We recommend this method, which has become increasingly widespread due to its many benefits during controlled alcoholic fermentation with no risk of a stuck fermentation (control over yeasting and nutritional requirements, an alcoholic content > 15% vol., temperature < 27°C, total SO_2 levels < 8 g/hL).

- The correct time to add the rehydrated bacteria to the must depends on the level of total SO_2:
  - 24 hours after yeasting if the level of SO_2 < 4 g/hL.
  - 48 hours after yeasting if the level of SO_2 is between 4 to 8 g/hL.
- Evaluate the MLF kinetics every 2 to 4 days.

--- PACKAGING---

Doses for 2.5 hL, 25 hL, 100 hL and 250 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® F** 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.

Danstar product, distributed by:

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