# FML EXPERTISE®

# S

**Strain *Oenococcus oeni* selected by the *Institut Français de la Vigne et du Vin* (IFV).**
***Oenococcus oeni* seeding bacteria for optimized malolactic fermentation process of high quality wines**

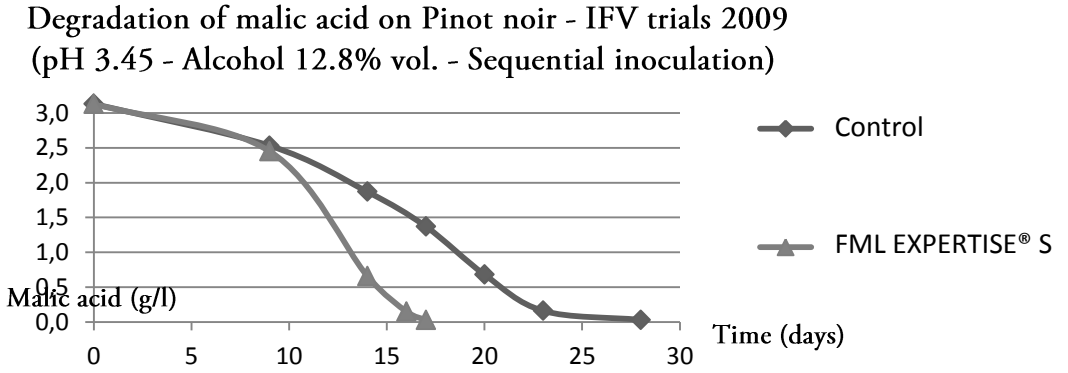
**Malolactic fermentation is a crucial stage in the winemaking process because it de-acidifies the wine, and it has also been consistently proven to enhance wine quality. Choosing the right lactic acid bacteria is therefore vital, and that is why we strive to develop bacterial preparations adapted to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

**FML EXPERTISE® S 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.**

**FML EXPERTISE® S carried out from a panel of red wines from various French regions. The purpose of this research program was to select bacteria demonstrating high performance oenological activity under difficult conditions by developing their qualitative organoleptic expressions.**

## MICROBIOLOGICAL AND ENOLOGICAL PROPERTIES

- **Fast implanting following direct inoculation.**
- **Multiplies rapidly, resulting in a very short malolactic fermentation.**
- **Resistant to pH levels ≥ 3.3.**
- **Resistant to temperatures ≥ 14°C. For red wines, however, it is recommended to keep temperatures between 18°C and 22°C when the alcoholic strength is greater than 13.5% vol.**
- **Resistant to an alcohol content of up to 14.5% vol.**
- **Resistant to up to 50 mg/L of total $SO_2$ and 10 mg/L of free $SO_2$.**
- **Low production of biogenic amines.**
- **"Phenol negative" bacteria, which means that FML EXPERTISE® S 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 3 different inoculation times: co-inoculation, early inoculation, and sequential inoculation.**
- **Respect for vine-plant aromas with a prevalent « red fruit » expression, without any dominant lactic notes.**




**FML EXPERTISE® S has very rapid fermentation kinetics due to its strong binding capacity in musts and wines.**

## INSTRUCTIONS FOR USE

**Direct inoculation (without rehydration) is possible:**

- Open the sachet and add the **FML EXPERTISE® S** 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 **FML EXPERTISE® S** to 20 times its weight of clean chlorine-free water at 20°C.
- Stir. Rehydrate maximum 15 minutes.

*Example: A 25 g sachet of **FML EXPERTISE® S** for 25hL is rehydrated in 500 mL of water.*

**<u>Options 1 and 2: sequential inoculation in wine (end of alcoholic fermentation) or early inoculation (density 1020-1010):</u>**

- **Add directly to the wine (using the pump-over method without aeration or homogenization with a nitrogen addition), or to the fermenting wine.**
- **Maintain wine 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 (highly clarified wine, low pH, high $SO_2$ and alcohol levels, organic nitrogen deficiency, fermentation problems, etc.):**
- **Rehydrate bacteria with ATOUT MALO™ NATIVE (20 g/hL of wine to inoculate).**
- **Add ATOUT MALO™ BLANC for white wines or ATOUT MALO™ ROUGE for red wines (dose of 20 g/hL) before inoculating bacteria.**

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

**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 strength by volume > 15%, 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 and 8 g/hL.**
- **Evaluate the MLF kinetics every 2 to 4 days.**

## PACKAGING

**FML Expertise S is supplied as a pure freeze-dried bacterial culture packed in dose sachets for the**

## STORAGE AND TRANSPORT

**18 months at 4°C.**
**36 months at 20°C.**
**Once opened, use the entire sachet.**
**Can withstand a few days at room temperature.**

**Indeed, the quality of the bacteria is preserved if the product is stored at room temperature at a temperature below 25°C during one 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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