

**HIGHLY TOLERANT
FOR LIMITING CONDITIONS
VERY LOW DIACETYL
PRODUCTION**

Lactic acid bacteria
selected from nature

Lalvin VP41™

Oenococcus oeni

MBR™ process
direct inoculation



The MBR™ form of lactic acid bacteria represents a Lallemmand specific process that subjects the lactic acid bacteria cells to various biophysical stresses, making them better 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).

APPLICATION

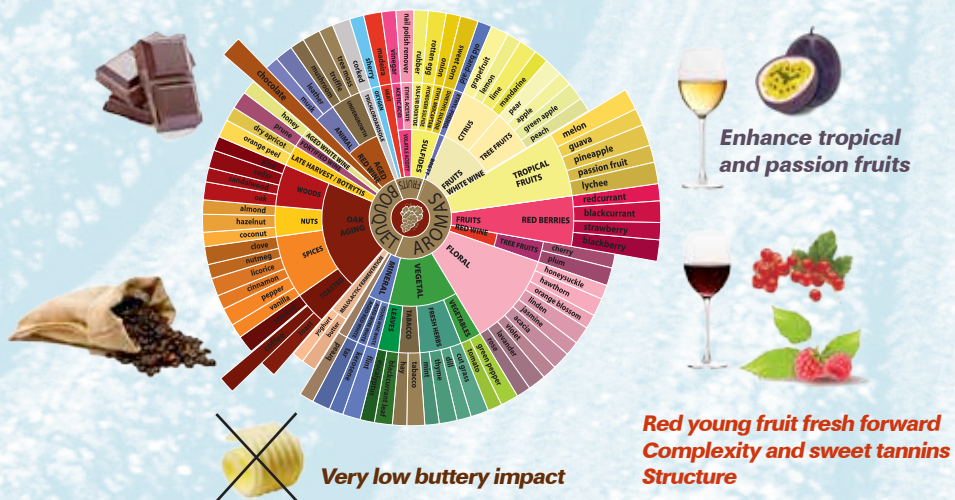
Lalvin VP41™ was isolated in a hot region of Italy region during an extensive European Union collaboration (CRAFT) to select natural *Oenococcus oeni* strains with unique performance and winemaking properties. Lalvin VP41™ stood out as a highly tolerant strain, which can perform under the most difficult winemaking conditions such as very alcohol as well as low pH. It is one of the ML strains very tolerant to SO₂. Beside its good resistance, Lalvin VP41™ is recognized for its sensory contribution to red berry fruit aroma, its late and slow degradation of citric acid and very low production of diacetyl.

OENOLOGICAL AND MICROBIOLOGICAL PROPERTIES

- pH tolerance : > 3.1
- Alcohol tolerance : up to 16 % vol.
- SO₂ tolerance : up to 60 mg/L total SO₂ (pay attention to molecular SO₂ at low pH)
- T° tolerance : > 16°C
- Low nutrition demand
- Good implantation
- MLF Kinetic : Fast
- Low volatile acidity production
- Bacteria cinnamoyl esterase negative: cannot produce precursors for ethylphenol production by *Brettanomyces*
- No production of biogenic amines
- Co-inoculation recommended

ORGANOLEPTICAL PROPERTIES

Beyond bio-deacidification, Lalvin VP41™ is a true winemaking agent, which contributes to the sensory complexity and the quality of wine as follows:



This sensory contribution can be further supported by the combination with an appropriate selected yeast strain and timing of ML bacteria inoculation.

INSTRUCTIONS FOR USE

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.
- Check malolactic fermentation activity (malic acid degradation) every 2 to 4 days.
- Stabilize wine once malolactic fermentation (MLF) is finished.

Recommended temperature range :

- White wine / rosé wine : from 16 to 20°C.
- Red wine: from 17 to 25°C.

If limiting conditions (high alcohol > 14.5 vol, or low pH < 3.1, or high SO₂ > 45 ppm) : from 18 to 22°C.

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

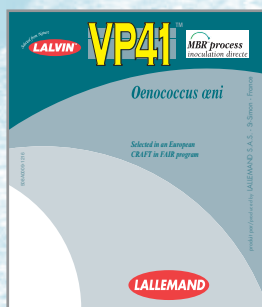
Depending on the SO₂ addition at crush:

- Sulfitage < 5 g/hL : wait for 24 hours
- Sulfitage 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 % of alcohol is reached.
- Complex nutrients addition at 1/3rd of alcoholic fermentation is recommended.
- Monitor malic acid and volatile acidity.
- If MLF takes place during AF and an unusual increase in volatile acidity is observed add Lysozyme™ (150-200 mg/L).
- Top the wine after alcoholic fermentation (AF).
- Otherwise rack and stabilize after MLF.



PACKAGING AND STORAGE

- Product in powder form obtained by lyophilisation.
- Available in different dosages for 2.5 hL (66 US gal.) – for 25 hL (660 US gal.) – for 250 hL (6,600 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.

Distributor: