

The wide variety of selected natural yeasts reflects biodiversity, and yet this diversity is underexplored despite the large number of species and subspecies (other than *Saccharomyces cerevisiae*) present in grape musts. During spontaneous fermentation, the microbial population dynamics result in successions of original metabolic activities contributing, positively or negatively, to the aromatic complexity and diversity of the wine. Lallemand Oenology R&D program on the management of alcoholic fermentation (AF) using non-*Saccharomyces* selected yeast in combination with *Saccharomyces cerevisiae* opens new possibilities for winemakers.



## ORIGIN AND APPLICATION

**LEVEL<sup>2</sup> INITIA™** is a non-*Saccharomyces* yeast (*Metschnikowia pulcherrima*) isolated from nature in Burgundy with the IFV (Institut Français de la Vigne et du Vin). **LEVEL<sup>2</sup> INITIA™** is an innovative and complete bioprotection tool developed to face the challenges of reducing SO<sub>2</sub> use in white and rosé prefermentative steps.

**LEVEL<sup>2</sup> INITIA™** is the first bioprotection yeast developed to limit oxidation phenomena in the early steps of winemaking due to its dual action of consuming oxygen and decreasing copper levels. Indeed, **LEVEL<sup>2</sup> INITIA™** has been selected from more than 100 strains of *Metschnikowia pulcherrima* for its high dissolved oxygen consumption capacity. When used during pre-fermentative steps, it can also partially decrease copper content, a known catalyzer of oxidation reactions.

As such **LEVEL<sup>2</sup> INITIA™** has the capacity to control a wide range of undesirable microorganisms. As it is non fermentative and able to grow at low temperatures, **LEVEL<sup>2</sup> INITIA™** is a great biological tool particularly well adapted to manage prefermentative steps in white and rosé vinification. **LEVEL<sup>2</sup> INITIA™** is suitable for organic wine production in the EU.

## MICROBIAL AND OENOLOGICAL PROPERTIES

- Pure culture of *Metschnikowia pulcherrima*.
- SO<sub>2</sub> tolerance: < 40 mg/L of total SO<sub>2</sub>.
- Resistant to low pH.
- Alcohol tolerance: very low.
- Fermentative capacity: very weak to none.
- Implantation and growth capacities: high.
- Optimal temperature range: 4 to 18°C.
- No production of undesirable compounds (such as volatile acidity, SO<sub>2</sub>, H<sub>2</sub>S, etc.).
- Requires inoculation of selected *Saccharomyces cerevisiae* yeast for alcoholic fermentation.
- Nutrition management: systematic nutrient addition with *Saccharomyces cerevisiae* inoculation is recommended.
- **High oxygen consumption capacity to synthesize its own polyunsaturated fatty acids.**

## BENEFITS

**LEVEL<sup>2</sup> INITIA™** helps to reduce the use of sulfites in white and rosé winemaking while preserving key wine quality components and freshness:

- Limits browning
- Preserves aroma including those sensitive to oxidation, such as thiols (Figure 1)
- Avoids sensory deviations from microbiological origins (Figure 2)

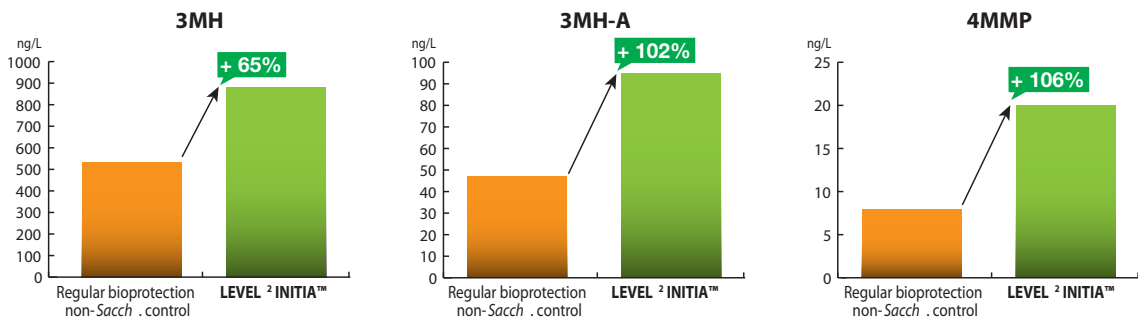


Figure 1 : Thiols analysis measured in bottled Sauvignon blanc (Spain, 2020). Winery trial comparing **LEVEL<sup>2</sup> INITIA™** to a regular non-*Saccharomyces* bioprotection yeast, both added at 10 g/hL before a cold stabulation at very low temperature (5 days of extended juice lees contact at 4°C).

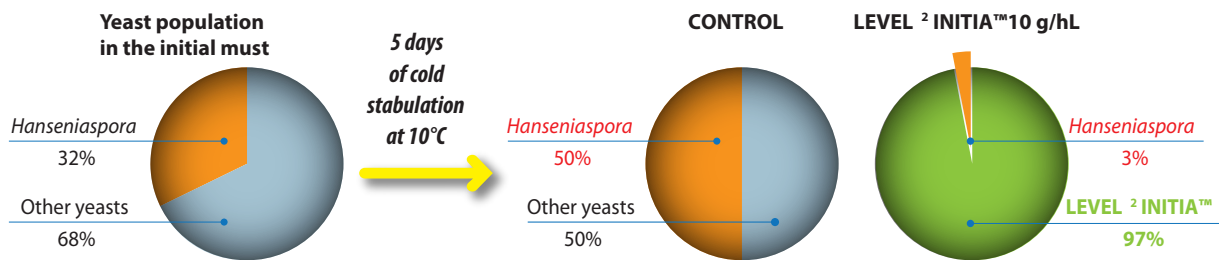


Figure 2 : Yeast count in a Chardonnay (Beaujolais, France, 2020). Winery trial comparing a control without bioprotection to **LEVEL<sup>2</sup> INITIA™** added at 10 g/hL before a cold stabulation (5 days of extended juice lees contact at 10°C).

## INSTRUCTION FOR USE

- Recommended dosage: 7 to 25 g for 100L of must or 100 kg of grapes to be adapted depending on the process (temperature, degree of risk for microbial contamination, duration of the prefermentative steps, timing of the inoculation, etc.).
- Add as early as possible.
- Rehydrate **LEVEL<sup>2</sup> INITIA™** in 10 times its weight of clean water (temperature between 20 and 30°C).
- Stir gently to suspend and wait for 20 minutes.
- Inoculate the grapes or must. The difference in temperature between the grapes-must to be inoculated and the rehydration culture suspension should not be higher than 10°C (if necessary, acclimatize the temperature of the culture by slowly adding must).
- Always rehydrate the yeast in a clean container.
- In some cases (mechanical harvest when juice is present) addition without rehydration can be considered (please refer to your supplier or Lallemand). In this case the highest dosage should be considered.

## PACKAGING AND STORAGE

- Available in 500 g
- Store in a dry place at 4 to 11°C
- To be used once opened

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