

ACTIVE BIOPROTECTION YEAST FOR RED WINES



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 most grape musts. During spontaneous fermentation, the actual microbial population dynamics result in successions of original metabolic activities contributing, positively or negatively, to the aromatic complexity and diversity of the wine. Thanks to the Lallemend Oenology R&D program, management of alcoholic fermentation (AF) using non-*Saccharomyces* selected yeast in combination with *Saccharomyces cerevisiae* opens new possibilities for winemakers.

DESCRIPTION

Managing microbial dynamics by encouraging beneficial microorganisms and repressing the growth of detrimental ones is the fundamental principle of biocontrol.

LEVEL² GUARDIA™ is a new non-*Saccharomyces* (*Metschnikowia pulcherrima*) selected from nature by IFV (Institut Français de la Vigne et du Vin), highly adapted for bioprotection in wines. When applied early in the process, implantation and growth performance of LEVEL² GUARDIA™ allows early and efficient colonization of red musts.

LEVEL² GUARDIA™ has been screened and chosen for its capacity to secrete high concentrations of pulcherrimic acid, a strong iron chelating agent. This iron depletion makes the environment unsuitable for the growth of contaminant microbes.

These unique characteristics make, LEVEL² GUARDIA™ highly efficient against a wide range of undesirable microorganisms (oxidative yeast, *Brettanomyces* spp., acetic bacteria).

LEVEL² GUARDIA™ is suitable for organic wine production in EU.

BENEFITS

Due to its non-fermentative property and ability to grow at low temperatures, LEVEL² GUARDIA™ is a useful natural tool during red winemaking pre-fermentation steps. It helps with the reduction of sulfites use and to prevent from spoilage contamination from harvest to vatting. LEVEL² GUARDIA™ is also perfectly suitable for cold soak (figure 1).

It also facilitates the implantation and the growth of the selected *Saccharomyces cerevisiae* inoculated sequentially to perform the alcoholic fermentation.

LEVEL² GUARDIA™ has a positive impact on wine quality by avoiding organoleptic deviations from microbiological origin and bringing positive sensorial impact (figure 2).

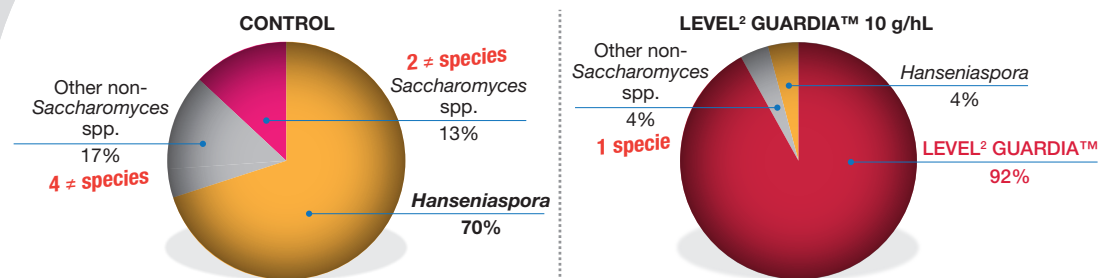


Figure 1: Implantation control in a Grenache (INCAVI, Spain, 2020). Trial comparing LEVEL² GUARDIA™ added at 10 g/hL before a cold soak (5 days at 10°C) to a control without bioprotection. Zero sulfites addition.

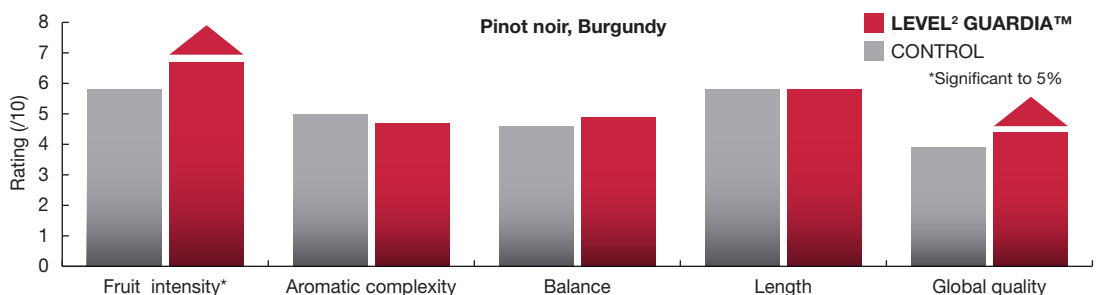


Figure 2: Sensorial analysis led by an expert panel of 15 tasters in a Pinot noir (IFV Beaune, France) comparing a control and LEVEL² GUARDIA™ at 10 g/hL. Zero sulfites addition.

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PROPERTIES

- Pure culture of *Metschnikowia pulcherrima*.
- SO₂ tolerance: < 40 mg/L of total SO₂.
- Alcohol tolerance: very low.
- Fermentative capacity: very weak to none.
- Implantation and growth capacities: high.
- Optimal temperature range: 8 to 26°C.
- No production of undesirable compounds (such as volatile acidity, SO₂, H₂S, etc.).
- Requires inoculation of selected *Saccharomyces cerevisiae* yeast for alcoholic fermentation. Facilitates its implantation and growth.
- Nutrition management: systematic nutrient addition after *Saccharomyces cerevisiae* inoculation is recommended.
- **High capacity to produce a strong iron-binding compound (pulcherrimic acid), enhancing its capacity to limit the growth of spoilage microflora.**

INSTRUCTIONS 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 LEVEL² GUARDIA™ in 10 times its weight of clean water (temperature between 20 and 30°C).
- Stir gently to suspend and wait for 20 minutes.
- Inoculate on the grapes or must. The difference in temperature between the grape must to be inoculated and the rehydration medium should not be higher than 10°C (if necessary, acclimatize the temperature of the culture suspension 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 Lallemend). 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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