



LAB PRE-TEST PROTOCOL

ML Prime™

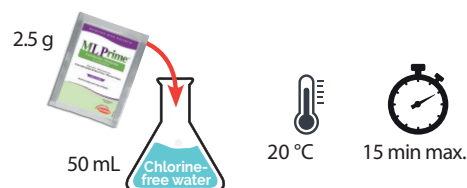
ML Prime™ is a selected wine bacteria strain (*Lactiplantibacillus plantarum*, formerly *Lactobacillus plantarum*) able to achieve a very fast and complete malolactic fermentation (MLF). The use of **ML Prime™** for restarting a stuck MLF has been shown to be successful in a wide range of challenging wine conditions.

ML Prime™ has unique features: it is resistant to **Bactiless™** (chitosan chitin-glucan), and can be used in wines treated to reduce the high risk spoilage indigenous bacteria populations. In addition, it does not metabolise acetaldehyde. A powerful pre-test at lab scale will help to determine the success of malolactic fermentation completion with **ML Prime™** in red wines and white wines when used to restart a stuck MLF.

It is used to determine the efficiency of **ML Prime™** to degrade malic acid in the stuck wine.

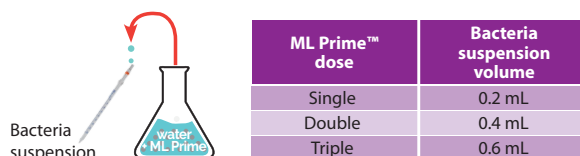
STEP 1

- Rehydrate the content of the bacteria sachet (2.5 g sachet) in 50 mL of clean chlorine-free water at 20 °C.
- Stir carefully. The suspension must be homogeneous for the test to work efficiently.
- Do not wait longer than 15 minutes.



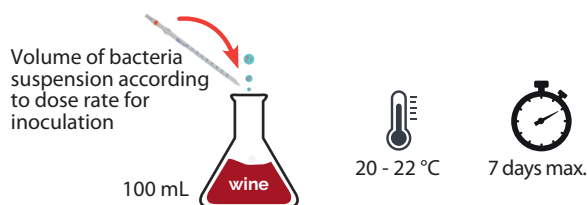
STEP 2

- Mix thoroughly and ensure a homogenous bacterial suspension prior to taking the bacteria volume for the pre-test.



STEP 3

- Inoculate the volume 100 mL of wine with the appropriate dose of the bacterial suspension. Mix carefully.
- Maintain temperature at 20-22 °C for maximum seven days.
- Check malic acid degradation at 48 h, 72 h and if needed, day 7 with an enzymatic method.



STEP 4

This lab pre-test is based on the results of malic acid degradation at 48 h, 72 h and day 7 (if there is still malic acid left after 3 days).

- The test is positive when the malic acid concentration is below 0.2 g/L. It can be after at 48 h or 72 h or day 7. Select the dose rate of **ML Prime™** to restart the MLF.
- Beyond 7 days, the test is negative if the concentration of malic acid is above 0.2g/L.

KEY POINTS

- This test needs to be performed at ambient temperature (20-22°C). If the wine to be inoculated is below 20 °C or above 22 °C, perform the test at your wine temperature, because ML Prime™ is quite sensitive to temperature. A lower or a higher temperature can impact the result of this pre-test.

For volumes of greater than 8000 L, we strongly recommend this Lab Pre-test protocol due to the potential economic savings. For more information, please contact your Lallemand sales representative

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WINE YEASTS



WINE BACTERIA



NUTRIENTS /PROTECTORS



SPECIFIC YEAST DERIVATIVES



ENZYMES



CHITOSAN



VINEYARD SOLUTIONS



LALLEMAND OENOLOGY

Original by culture



RESTARTING STUCK MALOLACTIC FERMENTATION

Easy and fast protocol for difficult wines using **MIL Prime™**

STEP 1

Use specific yeast cell walls Reskue™ to detoxify the wine by trapping the main MLF inhibitors, mostly pesticides residues and medium chain unsaturated fatty acids.

A



- Prepare **RESKUE™** at 30 g/hL; rehydrate in 10 times it's weight in water
- Mix then wait for 20 minutes

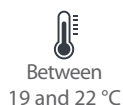
B



- Add to the stuck wine and homogenize
- Allow to settle for 48 hours avoiding oxygenation
- Rack the wine into another tank avoiding high exposure to oxygen

STEP 2

A double dose inoculum of **ML Prime™** is the best answer to restart stuck or sluggish MLF.



- Inoculate with the dose according to the **LAB Pre-Test protocol** or with a double dosage of **ML Prime™** by rehydrating in chlorine-free water or suspension in a small volume of the wine and add to the wine (for example: 2 doses of **ML Prime™** 25 hL to restart 25 hL of wines).
- Maintain a stable temperature between 19 and 22°C during all the processes and until the completion of MLF.

If there are concerns about potential microbial spoilage in the wine or the VA has increased, the use of Bactiless™ is recommended. ML Prime™ is very resistant to Bactiless™.

Note that *Oenococcus oeni* strains are sensitive to Bactiless™

The addition of Bactiless™ is after Step 1 (detoxification of the wine with Reskue™) and before the inoculation with ML Prime™.

Prepare Bactiless™ at 20 g/hL resuspended in water or wine. Add to the wine, ensure a good distribution in the wine, and wait 24 hours before ML Prime™ inoculation.

Please, ask your Lallemand contact for further information.



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