



Reskue™

A new selected wine yeast cell-wall to adsorb fermentation inhibitor

Application

Grape must composition may have inhibiting toxic compounds that affect yeast viability and fermentative activity, and that are responsible for sluggish or stuck alcoholic fermentation.

Inhibiting toxic compounds, such as Short and Medium Chain Fatty Acids (SMCFA) have been widely described for their inhibition of alcoholic fermentation. Actually, yeast cell-walls are commonly used to eliminate these SMCFA in order to enable a complete and steady fermentation.

Pesticide residues (fungicide, herbicide, insecticide) can also seriously affect yeast viability and compromise the end of fermentation. Recent studies also showed that they can negatively impact the production of aromas (namely esters) and the wines fruit character (Noguerol-Pato et al, 2014).

ResKue™ is a selected wine yeast cell-wall, well characterized at both biochemical and physical properties level, and possessing a high sorption capacity.

ResKue™ is an efficient tool to remove SMCFA and pesticide residues.

Results

Since 2006, Lallemand R&D has focused on the better characterization of yeast cell-walls. Aiming at increasing sorption capacity of our cell-walls, the research work led to the selection of a wine yeast and a specific autolysis process (Pradelles et al., 2009). Prior rehydration of the cell-walls was also confirmed as an important step to enhance sorption capacities.

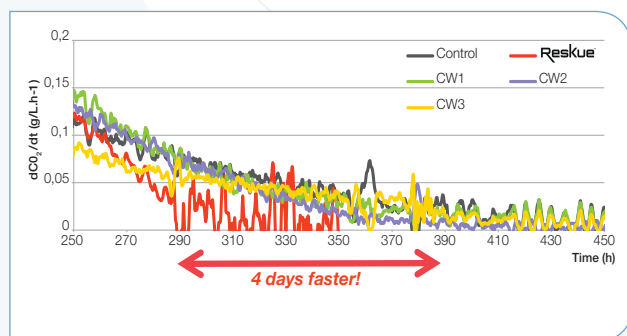


Figure 1: Lab-scale trial, Chardonnay, France, 2012.
Addition of different cell-walls at 40 g/hL at the 3/4th of AF.
Impact on AF kinetics towards the end of fermentation.

Besides, a new method for the analysis of yeast cell-wall's biochemical composition and the evaluation of its physical properties were also developed (Schivavone et al., 2014 and 2015).

Lab and winery-scale experiments were made to test the new selected wine yeast cell-wall ResKue™ under harsh alcoholic fermentation conditions. The results show that ResKue™ favors complete and steady fermentations (Figure 1), thanks to the removal of SMCFA and pesticide residues (Figure 2 & 3).

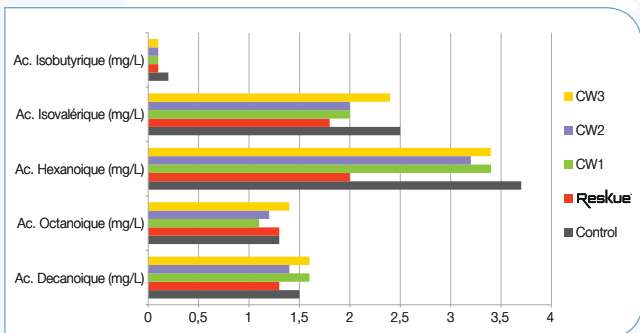


Figure 2: Lab-scale trial, Chardonnay, France, 2012.
Addition of different cell-walls at 40 g/hL at the 3/4th of AF.
Impact on the SMCFA content at the end of AF.

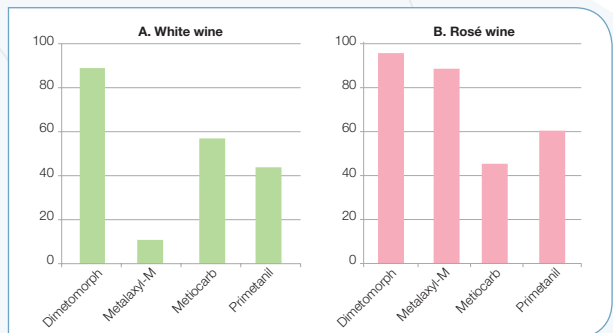


Figure 3: Lab-scale trials, White (A) and Rosé (B) wines
contaminated with several pesticide residues, Spain, 2013.
Pesticide removal (%) after addition of ResKue™ at 40 g/hL.

Dosage and instructions for use

- Recommended dosage is 40 g/hL (3.4. lb. per 1000 U.S gallon).
- Rehydrate the specific wine yeast cell-wall prior to addition to must with the appropriate protocol: Suspend ResKue™ in 10 times its weight of water from 30 to 37°C, mix, wait for 20 minutes and then add to the must to treat, ensuring a proper dispersion through in the whole volume.
- Add ResKue™ to the must about 2/3rd of AF to prevent sluggish fermentation.
- In case of a curative treatment on a stuck AF. Treat the stuck must prior to the restart.
- Maximum dosage is 40 g/hL.

Packaging and storage

- 1 kg sealed foil bags.
- Store in a dry environment below 25°C.

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