During the vinification process, the role of wine bacteria in the sensory profile of wines is vital. Optimize your wines' profile with our range of selected wine bacteria.

Our wine bacteria and your wine’s sensory profile: don’t miss out this winemaking technique!

Impact of our wine bacteria on the sensory profile of your wines: no more doubts!

The role of wine bacteria metabolism in the production of positive aromas:

• The specific metabolisms of our wine bacteria actively participate in the production of a number of fermentation compounds that are derived from grape substrates (ethyl esters, higher alcohol esters). Some of these compounds are volatile molecules that promote and positively reinforce organoleptic profiles of white, rosé and red wines.

• The differentiated genomes and the enzymatic composition of our wine bacteria allow them to take different metabolic pathways conducive to producing esters that provide numerous aromas in different wine types.

• The speed at which citric acid is degraded also varies depending on the strain that is selected and promotes to a greater or lesser extent the production of diacetyl that creates the perception of the lactic taste in white wines.

Our range of selected wine bacteria:

Our studies on aromatic characterization of our wine bacteria carried out in different wine regions and in different grape varieties demonstrate:

• very distinct aromatic tendencies from one bacteria to another. Some develop fruit notes (red fruit, black fruit, fresh or ripe fruit, exotic fruit), others more spice notes.

• an impact on wine structure: various degrees of sensations of astringency, volume or roundness, depending on the strain, make it possible to anticipate the desired result.

• the ability to produce lactic notes depending on the selected wine bacteria.
One of the main compounds that can influence aromatic expression in white wines is diacetyl. In small concentrations, it has a positive influence on white wines, with high concentrations (from 1 to 4 mg/L) associated with the appearance of buttery and lactic notes that are considered unpleasant. Where does diacetyl come from? It is principally produced during malolactic fermentation (MLF) and comes principally from the degradation of citric acid in the must or wine during fermentation. The timing of this transformation strongly influences its final content in finished wines. Analysis of our bacteria and the numerous studies we have carried out on the subject confirm that the appearance of lactic/buttery notes is closely linked to the selected wine bacteria that carries out MLF and on the timing of inoculation.

Impact of the bacteria strain
Each strain behaves differently in relation to the moment and the speed that citric acid is degraded into diacetyl in wines. This variation is particularly pronounced when the wine bacteria is inoculated at the end of alcoholic fermentation (post AF).

Impact of timing of inoculation
Even when a wine bacteria that produces large quantities of diacetyl is used, such as BKM®, it is possible to significantly reduce the production of lactic notes by carrying out co-inoculation (inoculating the wine bacteria 24 to 48 hours after yeast has been added to the must).

Choosing the right wine bacteria for your wine profile
Our wine bacteria need to be integrated into your different fermentation timetables very early on in order to respond to the requirements of the different styles of wine. To help manage the sensory profile of your wines, use our on-line decision-making tool to help you choose the right wine bacteria (available at www.lallemandwine.com).

Impact on wine tasting
These variations in aromatic composition, derived from the use of different selected wine bacteria and yeast, may cause a significant influence on tasting. The taste panel can easily observe differences in fruit, floral and vegetal characters among wines that have been inoculated with different wine bacteria. At the same time, tasters can also detect significant variations in wine structure. These differences concern perception of astringency, mouthfeel or volume on the palate in red wines. They are often very significant and closely linked to the strain and nature of the selected wine bacteria that was used during MLF. Consequently, these grounds establish the fermentive character of a wine, its fruit profile and its identity and gives new directions to aromatic expression.