

ENSURING THE MICROBIOLOGICAL STABILITY OF MUSTS AND WINES

Must – and later, wine – are constantly subject to the presence of numerous microorganisms.

As soon as the grapes are harvested, the grapes' indigenous flora comes into play.

This continues throughout the fermentation and post-fermentation stages up until ageing in the bottle, with **organoleptic deviations**.

The **preventive microbiological control** of such spoilage flora is crucial to ensure the quality of the final product.

In addition, global warming causes **pH levels to increase** in musts and wines.

The resulting drop in acidity promotes the development of contaminating microorganisms and reduces the antiseptic action of sulphites in wines.

Chitosan, a polymer derived from *Aspergillus niger* chitin, is a **microbiological control tool** that can be used to complement or substitute sulphites.

MULTIPLE APPLICATIONS STARTING FROM HARVEST RECEPTION



A preparation based on **activated chitosan** that is used as a **biocontrol agent** and which **reduces contamination** caused by spoilage microorganisms.

MICROBIAL PREVENTION INCLUDING *B. bruxellensis*



WHY? A tank or a plot regularly identified as lacking clarity or having *B. bruxellensis* contamination problems.

WHEN? In musts, as soon as possible. Identify the stage at which the contamination occurs and treat (e.g. at the end of pressing (white and rosé), during AF).

HOW? Allow some flexibility for chitosan-based treatment of wine in case of contamination.

ENSURING SAFE AF



WHY? Successful yeasting with selected microorganisms or indigenous fermentation.

WHEN? Anytime before the start of AF. Recommended at vatting or at the end of the settling process, if it takes place.

HOW? If the quality of the harvest is average, may be split into 2 additions – to the harvested grapes and when vatting.

DECONTAMINATING A MUST OR A HARVEST



WHY? Quickly and effectively reduces indigenous microbial flora, thus improving the wine's clarity. May also be used in cold stabulation for up to 10 days.

WHEN? Apply as early as possible, ideally to the harvested grapes. If necessary, repeat application after settling in case of high microbiological pressure.

HOW? For spraying on the harvested grapes, prepare a 5% solution and keep it away from direct sunlight (chitosan degrades at $T^{\circ} > 40^{\circ}C$).

RESTARTING AF



WHY? Tanks where the end of fermentation has slowed down. Eliminate microorganisms that would compete with *S. cerevisiae* and restart AF.

WHEN? End of AF, at the first sign of slowdown.

HOW? Add to the tank while pumping over to allow oxygen supply and thus promote respiratory metabolism and yeast multiplication.

PROCESS LOW OR NO SO₂



WHY? An anti-microbial alternative to the addition of sulphites and to bioprotection. Proven effective in must.

WHEN? Split additions at the same stages as when adding SO₂.

HOW? Preventive additions to must with KTS® FA. In wines, KTS® CONTROL may also be added preventively.

AND AFTER ALCOHOLIC FERMENTATION?

KTS CONTROL

Activated chitosan-based preparation designed to control the development of microorganisms responsible for organoleptic deviation in wines.

DECONTAMINATING WINE

WHY? Problems with wines contaminated by *B. bruxellensis*.

WHEN? After AF or after MLF.

HOW? Add as soon as possible, at the first sign of contamination. Control population with a laboratory to determine the treatment dose. Make sure the product is properly homogenised in the tank.

Check 72h to 1 week later for *B. bruxellensis* elimination.

CONTROLLING MALOLACTIC FERMENTATION

WHY? To inhibit or block unwanted malolactic fermentation or to partially achieve it.

An alternative to the addition of sulphites.

WHEN? When AF is finished, before or during MLF.

HOW? Add with the help of pumping over.

Make sure the product is properly homogenised in the tank. The wine must be at a temperature above 10°C.

FUMARIC ACID

An organic acid used as a tool to control malolactic fermentation.

KTS CLEAR

A chitin-glucan and pea protein-based fining product that combines a clarifying effect with the elimination of unpleasant tastes.

CLEANSING AND ELIMINATING UNPLEASANT TASTES RESULTING FROM CONTAMINATION

WHY? To eliminate unpleasant tastes that appear at a late stage in the wine due to the development of spoilage microorganisms.

WHEN? Use on finished wines. If KTS® CLEAR is used for the elimination of unpleasant odours resulting from microbiological contamination, e.g. volatile phenols following *B. bruxellensis* contamination, before treating make sure that the contaminants have been eliminated and that the wine is racked before treatment with KTS® CLEAR.

HOW? Add to the tank with the help of inverted pumping-over in an airless environment. It is necessary to then rack the wines within 48 to 72 hours to prevent the release of adsorbed molecules.

ITS ACTION COMPLEMENTS THAT OF KTS® CONTROL