



LALLZYME MMX

Enzyme to promote release of polysaccharides.

PROPERTIES

LALLZYME MMX is a beta-glucanase blend. This enzymatic preparation was developed to improve the short maturing of wines on lees. In fact, it increases the volume and mouthfeel contributing to a fuller more rounded wine.

LALLZYME MMX also allows elaboration of vintages rich in polysaccharides, which can be used later for blending.

This preparation also improves the tartaric stability of red wines and reduces the quantity of bentonite to stabilize white wines.

ACTIVITIES

The standard activities of LALLZYME MMX are :

- 1840 PGu/g (Poly-Galacturonase units)
- 25 PLu/g (Pectin Lyase units)
- 545 PEu/g (Pectin Esterase units)

ACTION

LALLZYME MMX allows release of polysaccharides from yeasts.

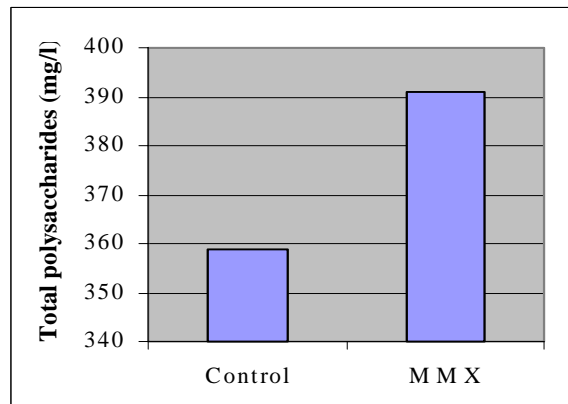
These polysaccharides have several interesting technologic properties. They can :

- form complexes with certain polyphenolic components of red wines, contributing then to a fuller more rounded wine (Saucier et al., 1996).
- increase the tartaric stability of wines (Charpentier et al., 1993) in reacting with the tartrate crystals, inhibiting their formation
- stimulate the malolactic fermentation (Guilloux-Benantier et al., 1995)

RESULTS

- Trials conducted on white wines (Viura variety), preserved on lees in stainless steel tanks. Measurements of total polysaccharide concentrations show a significant and quicker increase in the amount of polysaccharides from the yeast cell wall in treated wines (B. Izquierdo-Torres, 1999) (Graph 1).

Graph 1 – Level of polysaccharides measured by HPLC.



- Other trials conducted in triplicate on Chardonnay wines held on lees (MMX dose : 2.5g/hl, temperature : 59-63°F, length of the trial : 6 weeks) show a concentration of polysaccharides 47 % higher in the wines treated with LALLZYME MMX in comparison to the control (Proenol, Portugal, results 1998).

- Trials conducted on red wines with lees in barrels after malolactic fermentation, show that the use of LALLZYME MMX at the end of maturing improves mouthfeel and volume of the wine. Moreover the treated wines showed improved tartaric stability while the untreated wines (control) were not stable.

Conditions	Comments	Preferences
Control	Fizzy, woody, a little bit dry	+
Control +bâtonnage	Not evolved, less fizzy	+/-
MMX	Lot of fruit, thick	+++
MMX + bâtonnage	Complex, tannic	++

Table 1 : Tasting from 12/01/99 on total lees

METHOD FOR USE

It is essential to preserve the fine lees. Therefore the wine/fine lees phase must be carefully separated from the solid phase. 3-5g/hL is the recommended dosage range.

WHITE WINES :

- 1) Separate the heavy lees immediately after alcoholic fermentation.
- 2) Add 1/4lb. MMX per 1000 gallons to the mix of wine + fine lees.
- 3) Temperature should stay under 61°F, handle the pumping over according to the oxidative potential (usually 2 pumping over/week).
- 4) Taste daily to evaluate the action of the enzymatic preparation and separate the lees from the must as soon as the desired volume and mouthfeel are reached.

RED WINES :

- 1) After completion of alcoholic and malo-lactic fermentation submerge the cap and incorporate 1/2lb. MMX per 1000 gallons.
- 2) Let stand 6 hours before transferring the mix of wine and fine lees to a buffer tank.
- 3) Keep the temperature around 65°F. Taste daily and handle pumping over.
- 4) Separate wine from lees as soon as the desired volume and mouthfeel are reached.

Remark for white and red wines : Shift the addition of SO₂ by one week to limit the production of H₂S by the sulfite reductases from the lees.

CREATE YOUR OWN RESERVE OF POLYSACCHARIDES :

This “high quality” technique allows the conservation of a polysaccharide reserve that can be use later for blending in order to contribute mouthfeel to some lots.

- 1) Separate and treat the heavy yeast lees (corresponding to the interface wine/heavy lees).
- 2) Estimate the quality of the yeast lees. It is essential to use lees with no unpleasant smell or taste. Put the lees in a tank and add 1 1/2lb. MMX per 1000gallons. Keep the temperature under 61°F and pump over daily.
- 3) After 3 to 6 weeks (taste regularly), separate the lees from wine when the desired volume and mouthfeel are reached. Use this wine in blending as a reserve of polysaccharides.

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