



# LALLZYME BETA

**Enzyme for aroma enhancement.**

**PROPERTIES**

LALLZYME BETA is an enzyme preparation of pectinase with a strong glucosidase activity. LALLZYME BETA was developed to increase the aromatic intensity in the wine. The larger the reserve of aromatic precursors, the greater will be the effect of the enzyme treatment.

**ACTIVITIES**

The standard activities of LALLZYME BETA are :

- 595 PGu/g (Poly-Galacturonase units)
- < 5 PLu/g (Pectin Lyase units)
- 180 PEu/g (Pectin Esterase units)

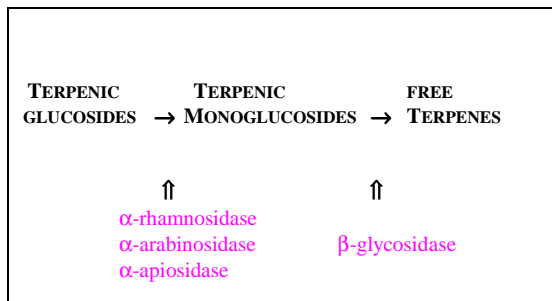
**ACTION**

The typical aroma perception is caused by the presence of numerous substances with different chemical properties. Some of the main classes of substances responsible for varietal aroma, such as terpenes (Muscat and aromatic varieties) or nor-isoprenoids (Chardonnay and many other varieties, even some red wines) are present in different concentrations.

They are present in wine under two forms :

- *the free form* : with odorous properties
- *the glucosidic form* : the odorous molecule is linked to one or more sugars, and is therefore not perceptible by olfaction.

LALLZYME BETA is capable of breaking down and splitting the aglycon and the sugar and releasing the varietal aromas. It improves therefore the aromatic intensity of the treated wines.



**Table 1** –Terpenes  
(Günata et al., 1990)

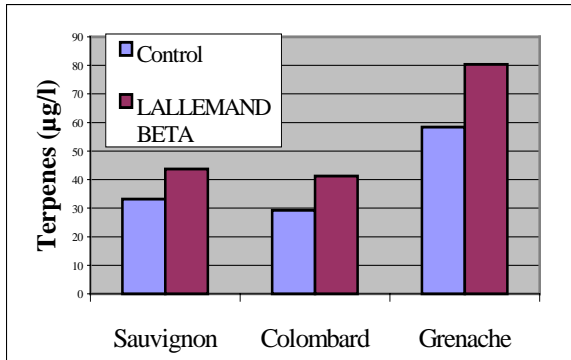
**RESULTS**

Trials conducted on different wines show a significant increase of the amount of free terpenes in wines treated with LALLZYME BETA (Table 2)(Graph 1).

Variety and origin		Terpene (µg/l)	Difference
<b>France 1989</b>			
Muscadelle	C	120.5	+30%
	E	156.6	
Sauvignon	C	33.1	+47%
	E	43.7	
Sémillon	C	27.7	+32%
	E	36.5	
Colombard	C	29.3	+40%
	E	41.3	
Grenache	C	58.3	+38%
	E	80.4	
<b>Austria 1990</b>			
Late Harvest, Traminer+Muscat Ottonel	C	680.0	+20%
	E	818.5	
<b>South Africa 1992</b>			
Chardonnay	C	46.4	+42%
	E	66.0	
Chenin	C	13.5	+53%
	E	20.7	

C :Control;, E : Enzyme

**Table 2** –Impact of LALLZYME BETA on the amounts of free terpenes



**Graph 1** – Concentration of free terpenes in French wines with and without LALLZYME BETA

### METHOD FOR USE

LALLZYME BETA is generally used in doses of 5 g/hL (190 g/1000gallon).

Dissolve the enzyme in water (ratio of 1 : 20) and add the solution to the wine to be treated. The treatment normally lasts for 4 to 6 weeks at the most, until the desired results are obtained.

Enzyme action is then stopped by addition of bentonite. (1/2 lb per 1000gallons in dry wines, 3/4 lb per 1000 gallons in others).

### NOTES

1. Beta-glucosidase enzymes are inhibited by glucose, therefore they should not be used until the end of alcoholic fermentation.
2. In order to ensure that aromatic precursors are present in the wine, it is advisable to perform a pre-test on few litres of wine by tripling the dose and keeping the temperature of the wine at 78-88°F. After a week, the difference in the aroma should be noted.