

# GLUTASTAR™

## The king of natural antioxidants

### DESCRIPTION

GLUTASTAR™ is a new natural SPECIFIC YEAST DERIVATIVES WITH GUARANTEED GLUTATHIONE LEVEL, dedicated to the protection of white and rosé wines against oxidation.

Added to the grapes or the must at the earliest stage in winemaking process, before the fermentation, the unique properties of GLUTASTAR™ confer to the wine an efficient protection against browning and aroma oxidation, a better aromatic expression, freshness, and a longer preservation of thiols and esters. The addition of GLUTASTAR™ contributes not only to enhance aromatic intensity and persistency thanks to the release of a high level of stabilizing peptides, but also to increase mouthfeel perception and wine thickness due to the polysaccharides enrichment, both in white and rosé wines.

GLUTASTAR™ is the result of a research collaboration with the Institut Universitaire de la Vigne et du Vin de Dijon, France, that evidenced its efficiency using a fine characterization via metabolomic approach. The combination of the original yeast strain and the optimized GSH+™ production process ensures the ability of GLUTASTAR™ to release the highest level of reduced glutathione and stabilizing peptides exhibiting a high free radical scavenging activity.



### BENEFITS & RESULTS

- A very high free radical scavenging activity**

Lallemand evaluated in 2018 the radical scavenging activity of a Sauvignon blanc from Val de Loire in France produced in the same winemaking conditions with and without GLUTASTAR™ and the results clearly show that the wine with GLUTASTAR™ has the most effective activity, as shown in figure 1.

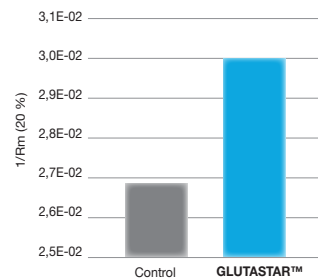
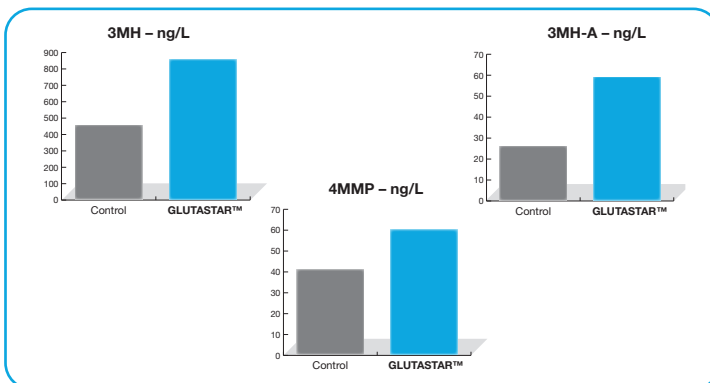


Figure 1: DPPH test measurement after bottling, comparative trial, Sauvignon blanc 2018



- A great impact on the aromas**

During a trial carried out on a Sauvignon blanc, Loire, France 2018, we compared the aroma compounds concentration of a control wine and the same wine treated with GLUTASTAR™ at 30 g/hL during the prefermentative maceration on solids (8 days at 4°C on solids then 24h of clarification at 12°C with enzyme). The figure 2 shows that the wine treated with GLUTASTAR™ had a greater concentration of the 3-mercapto-hexanol (3MH) and its acetate (3MHA) and also of the 4-mercapto-4-methylpentan-2-one (4MMP).

Figure 2: Comparative trial: Sauvignon blanc, Loire, 2018, analysis of volatile thiols at the end of AF



GSH+™ (Glutathione Optimized Process): An innovative LALLEMAND specific inactivation process to maximize the natural synthesis of glutathione to obtain a higher content of soluble reduced glutathione in the final product.



• **The highest level of reduced glutathione**

In a 2018 trial conducted on a Sauvignon blanc produced in the South-Western part of France, we compared a must in which we added 30g/hL of GLUTASTAR™ just after pressing, with classical settling (24h clarification at 5°C) with a control wine. A very clear effect of GLUTASTAR™ on the reduced glutathione level in the final wine was observed, as shown in Figure 3.

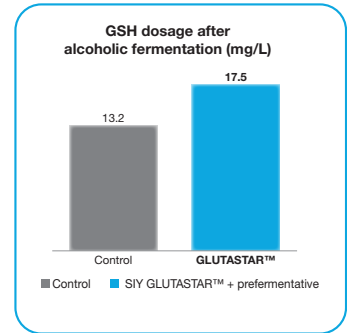


Figure 3: GSH dosages after AF, comparative trial, Sauvignon blanc 2018

• **A longer preservation of color and aromas over time**

We conducted a trial on a Rosé de Provence in 2018 (Syrah/ Grenache) comparing the color and aromas preservation ability over time of a wine treated right after pressing with pea protein (30 g/hL), GSH inactivated yeast (30 g/hL), GLUTASTAR™ (30 g/hL) and a control wine. The data presented in Figure 4 were observed after bottling and clearly show the efficiency of GLUTASTAR™ to protect wine color from the very beginning of the winemaking process.

This study also showed a good impact on aromas after bottling, with better candy, yellow and red fruits and spices aromas and less bitterness than in the other wines.

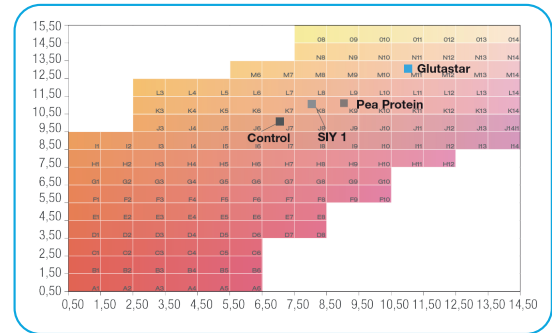


Figure 4: Managing color on Rosé de Provence (Syrah / Grenache)

**INSTRUCTIONS FOR OENOLOGICAL USE**

**Recommended dosage:** 20 to 40 g/hL (1.7 to 3.4 lb per 1000 U.S gallon) depending on the benefits desired.

- Suspend in 10 times its weight of water or must and add to the must during alcoholic fermentation.



OMRI (Organic Materials Review Institute) is a US national nonprofit organization that determines which input products are allowed for use in organic production and processing.

**PACKAGING AND STORAGE**

- 1 kg and 2.5 kg sealed alu foil bags.
- Store in a cool dry place.
- To be used once opened.

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The information in this document is correct to the best of our knowledge. However, this data sheet should not be considered to be an express guarantee, nor does it have implications as to the sales condition of this product. April 2022.

