Nº1

BIOLOGICAL TOOLS IN THE VINEYARD TO IMPROVE VARIETAL EXPRESSION

LALVIGNE™ AROMA

Background

In the context of current viticulture, the change observed in the climatic records of the last decades, with the rise in temperatures and the unusual rainfall distribution, is challenging for wine growers and winemakers to getting balanced grapes and wines, as these changes are leading to growing differences between technological maturity and aromatic and phenolic maturations. In order to face these changes, wine growers try to apply agronomic practices that can counteract these effects. Often these practices are not selective and have unwanted effects on different parameters of production or quality of the grapes.

LalVigne™ Aroma

LalVigne™ Aroma is 100% specific fractions of selected inactivated non-GMO *Saccharomyces cerevisiae* yeast. It is used in the vineyard through 2 foliar applications at the beginning of the grape ripening process. It helps with the increase in concentration of the varietal aroma precursors in the grapes, reducing the gap between the different maturations mentioned above. It will therefore preserve the balance of the grape composition and increase its varietal typicity.

How does LalVigne™ Aroma get these results?

Several scientific studies have shown that the specific formulation of LalVigne™ Aroma is recognized by the plant, generating a response from it. This response is related to the acceleration and increase in the activity of secondary metabolism pathways, metabolism responsible for the synthesis of a large part of the aroma compounds that will accumulate in the grapes.

IMPACT ON GRAPES - EXPERIENCE ON GEWÜRZTRAMINER

During 2017 and 2018, the Edmund Mach Foundation of "San Michele all' Adige", Italy, has tested the foliar application of LalVigne™ Aroma in a commercial vineyard of Gewürztraminer in the Alto Adige region.

Figures 1 and 2 show an increase in the concentration of aroma compounds in grapes from plants treated with LalVigne™ Aroma.

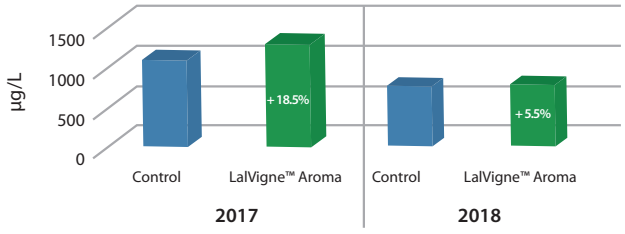

Figure 1. Comparison of the sum of free aromatic content in grapes: treated and control with LalVigne™ Aroma.

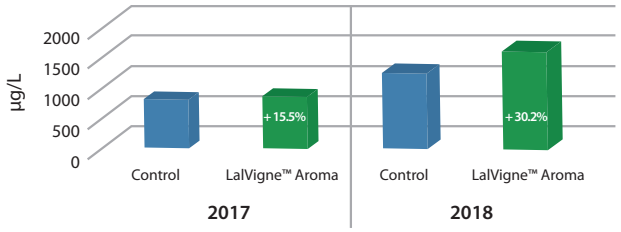

Figure 2. Comparison of the sum of bound aromatic compounds present in grapes treated and control with LalVigne™ Aroma.

Concentrations of thiolic precursors of 3MH, both, linked to cysteine and glutathione in treated and control grapes were also analyzed in this study. These results are shown in Figure 3.

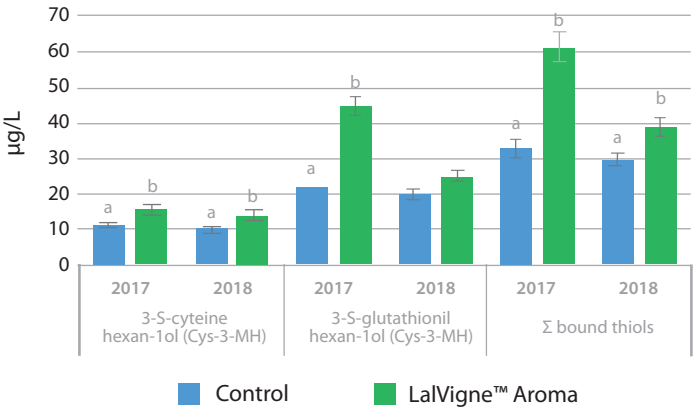

Figure 3. Comparison of the content of thiolic precursors present in grapes treated with LalVigne™ Aroma and control. . Different letters indicate significant differences with values of p <0.001.

The application of LalVigne™ Aroma has achieved a significant increase in the concentration of 3MH bound thiols. These precursors will be transformed into their volatile forms during fermentation, thanks to the yeast metabolism, giving the classical tropical aromas of thiol 3MH and its acetate A-3MH.

IMPACT ON WINE

In this same study of the Edmund Mach Foundation, a sensory analysis of the resulting wines from the tests made in the vineyard were carried out. These results are shown in Figure 4.

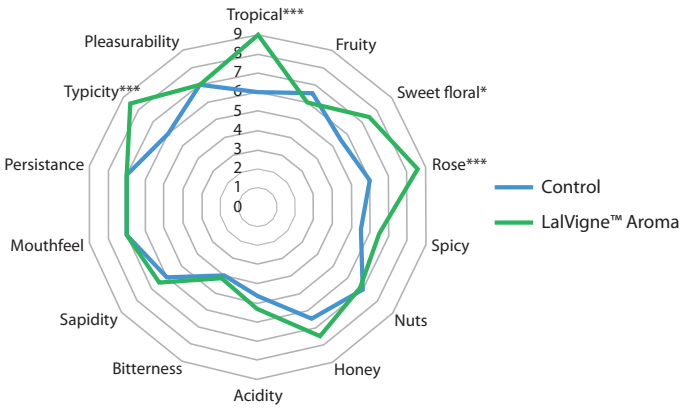

Figure 4. Sensory profile of Gewürztraminer wines in both modalities (control and treated with LalVigne™ Aroma). (* indicates an organoleptic difference with p <0.05, while *** is p <0.001).

The application of LalVigne™ Aroma on the vines has proven to be an effective tool to rebalance the gap between aromatic and technological maturity; without changing parameters related to the accumulation of sugars or pH, has favored the accumulation of aroma compounds typical of the variety, giving more balanced and higher quality grapes and wines.