

CLEAN BOUQUET-S

Treatment against reduction problems and enhance of primary aromas

Clean Bouquet-S is a new range of products specially developed to solve reduction problems, sulphides and unpleasant odours in wine. The product line Clean Bouquet presents different agents depending on the type of molecules to be removed; sulphides in its early stages (SH₂, CH₃SH) or aged sulphides which are more difficult to remove by standar products. In that way, these 2 Clean Bouquet S aforementioned available formats enable and optimal selectivity depending on the aging stage in the wine reduction.

Clean Bouquet SH. It is a product specifically designed for the removal of odours with a higher content of sulphides in their initial stages and fewer aged (oxidized) sulphides. Odours that recall rotten eggs, butane, burned rubber...

Clean Bouquet SS. It is a product specifically designed for the removal of odours with a higher content of aged (oxidized) sulphides. Odours that recall garlic, onions, asparagus, cook cabbage...

BENEFITS.

- Selective product for removing the specific sulphide compound to be eliminated.
- Primary aromas enhancer.
- It works quickly and it is easy to evaluate even in a wine glass.
- Extremely controlled and no significant cooper addition on a wine glass.

FEATURES.

The problems reduction in wine can be produced by multiple reasons and in different stages of the elaboration of wine. These problems always take place with a first formation of hydrogen sulphide (SH₂), and if this formation persists or if it is minmanaged in winery it can result in the presencie of thiols (R-SH) and finally in disulphides (RSSR), monosulphides (RSR), mercaptoethanol, methionol...

Each group of sulphides has its own aromatic features. In general, sulphides are considered aromatic defects (rotten eggs, butane, burnt rubber, garlic, onions, cooked cabbage...) although some sulphides derived from grape are important in the expression of fruity aromas.

Avanzare has designed a new product line that acts very specifically and selectively against those sulphides that are related to aromatic defects and therefore it presents significat advantages in comparison with the traditional use of copper sulphate or copper citrate.

Clean Bouquet-S is a product based on the action of copper focused and modulated by cellulose, specific tannins and yeast hulls.

The ability to select a type of sulphide (initial Clean Bouquet SH) or another (aged, Clean Bouquet SS) gives the oenologist the possibility of choosing the most effective and specific treatment for this problem, caring the expression of fruity aromas in wines.

TECHNOLOGY.

This interesting selectivity is achieved by the position of the copper in the product, so that by steric hindrance of the cation it is able to select by size the type of sulphide to be removed.

The technology used is based on the active cations immobilization, which allows a limited accessibility to the copper. Thereby it is accessible exclusively by each type of sulphide, by effect of the steric hindrance, for which it has been designed.



Figure 1. Work scheme Clean Bouquet

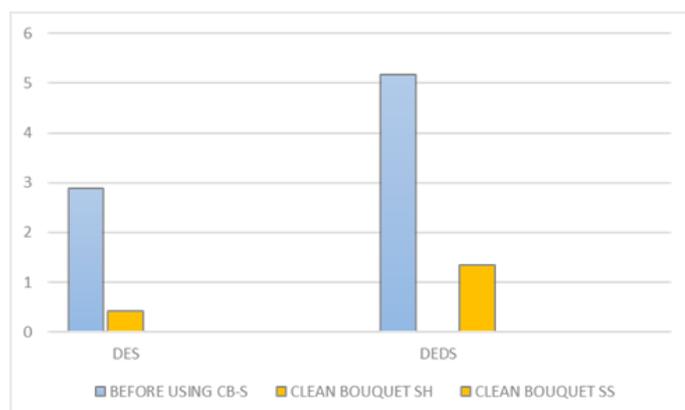
This effect allows selecting the type of the molecule to be removed without acting against the rest of molecules with sulphurous parts present in wine. This technology facilitates that the wines do not lose their own primary aromas molecules as well as allows eliminating aromas of reduction and closed, which usually have negative connotations in wines.

The technology used allows accomplishing this effect without a significant increase on the level of copper and avoiding the negative effects of the other products which present copper as active element, since it is based in the mobilization of copper on the yeast hulls and cellulose.

RESULTS AND SELECTION OF PRODUCTS.

Sulfuro presente	Denominación	U.Detección PPB	Olor reconocible	Producto recomendado
Sulfuro de hidrógeno (Ácido sulfhídrico)	SH ₂	1	Huevos podridos	Clean Bouquet SH
Metanotiol	CH ₃ SH	1,5	Goma quemada	Clean Bouquet SH
Etanotiol	CH ₃ CH ₂ SH	1,5	Butano	Clean Bouquet SH
Sulfuro de dimetilo	CH ₃ SCH ₃	25	Espárragos	Clean Bouquet SS
Disulfuro de dimetilo	CH ₃ SSCH ₃	10	Ajo	Clean Bouquet SS
Etiltioacetato	CH ₃ CH ₂ SAc	40	Cebolla	Clean Bouquet SS
Metionol	CH ₃ S(CH ₂) ₃ OH	1200	Col cocida	Clean Bouquet SS

Table 1. Selection of sulphur compounds present in the wine and their correlation with the type of Clean Bouquet to be used



	SULFUR COMPOUND ANALYZED		DOSE
	DES	DESD	
BEFORE USING CB-S	2,89	5,16	
CLEAN BOUQUET SH	0,43		3 g/Hl
CLEAN BOUQUET SS		1,35	3 g/Hl

Figure 2. Comparative test on two wines: "Tempranillo Denominación de origen" (appellation d'origine contrôlée) Rioja" with defects 1) Diethylsulphide (DES), 2) Diethyl disulphide (DESD), ppb values before and after using Clean Bouquet, after 24 hours.

DOSAGE.

RECCOMENDED DOSAGE Clean Bouquet SH y Clean Bouquet SS

Maximum permitted dose: 30 gr/Hl. Typical preventive dose: 1-3 gr/Hl. Typical treatment dose 5-10 gr/Hl.

The use of dose equal or below 10 gr/Hl (and following preparation instructions set by the manufacturer) produces much lower than 1 mg/L residual traces of copper in the wine, even before the filtering process. Once filtered, the residues therefore are reduced drastically.

PREPARATION.

Dissolve **1 part of Clean Bouquet SH or Clean Bouquet SS** in 10 times its weight in cold water. Shake to suspend for 10 min and add to the wine the suspended product. The addition can be conducted prior to a transfer or prior to tank agitation/mixing. Recommended contact time is 7-10 days. Afterwards, debourbage or filter the wine.

PHYSICAL APPEARANCE AND PACKAGING.

The product is presented as a brown powder, with typical yeasty aroma. The product is available in packs of 1 Kg and 2,5 Kg.

STORAGE INSTRUCTIONS.

Clean Bouquet SH and Clean Bouquet SS should be stored in its original package in a cold, dry and odor-free place.

August 29, 2023



REGISTRATION: R.G.S.A: 31.002865/LO, Product in accordance with the International Oenological Codex and Regulation 934/2019