

EPYCA WHITE ML-STOP

NATURAL TREATMENT FOR PRODUCTION OF WHITE AND ROSE WINES IN ABSENCE OF MALOLACTIC FERMENTATION AND WITHOUT ADDED SULFITES

EPYCA WHITE ML-STOP is a natural treatment for production of white and rosé wines without added sulfites, designed to integrate in traditional winemaking protocols.

EPYCA WHITE ML-STOP provides immediate protection from oxidation, together with a prompt stabilization of the aromatic and color components of the must, thus preserving the grape's aromatic and polyphenolic balance without the use of sulfur dioxide.

The outcome is the production of more stable and longer lasting WHITE wines with no added sulfites.

The *EPYCA WHITE ML-STOP* kit consist of 4 different formulations to be used sequentially and synergistically to replace the sulphur:

EPYCA 1 WHITE is used during fermentation. Its primary activity is to protect from oxidation and protect color. It is added to the must at yeast inoculation or prior to the start of wild yeast fermentation.

EPYCA ML-STOP is used at the end of the alcoholic fermentation to inhibit the start of malolactic fermentation.

EPYCA 2 WHITE is used during wine aging for its high stabilization and equilibration activity and is added at the end of the malolactic fermentation. *EPYCA 2 WHITE* refines the wine's organoleptic and preservation characteristics.

EPYCA 3 WHITE is used before bottling to improve the wine stability and prolong the preservation in time.

DOSAGE

1 *Epyca White ML-STOP Kit* treats 20 hL (530 gallons) of must/wine.

***EPYCA 1 WHITE* and *EPYCA 2 WHITE* use is mandatory.**

***EPYCA 3 WHITE* use is optional.** It is used to extend the shelf life of the wine or

whenever the winemaker believes that the wine does not sufficient anti-oxidative protection.

***EPYCA ML-STOP* is to be imperatively used at a ratio of 1/1'000** - 1 liter of *EPYCA ML-STOP* for 10 hl (265 gallons) of must/wine.

PRODUCT FOR ENOLOGICAL USE

In accordance with EU Regulation 606/2009, Codex Alimentarius OIV and OIV Practices (Art. 2.1-2.1.7-3.2-3.2.6).

EPYCA WHITE ML-STOP is made with Oenological Tannin (OENO 6/2008 and OENO 352/2009 F-COEI-1-TANINS/INS.181) obtained from natural polyphenolic complexes extracted from grape seeds (*Vitis vinifera*) and wood.

Tannin: The residual amount of tannin, calculated in gallic acid equivalents, shall not exceed 0.8 g/L in white wine and 3.0 g/L in red wine. Only tannin which does not impart color may be used in the cellar treatment of juice or wine. GRAS per FDA advisory opinions dated 4/6/59 and 3/29/60. Total tannin shall not be increased by more than 150 milligrams/liter by the addition of tannic acid (poly-galloylglucose).

REGISTERED AT ECOCERT OENOLOGIE FOR USE IN BIOLOGICAL AND ORGANIC WINES

In accordance with Regulation (EC) N. 834/2007 - RUE 203/2012 and NOP Regulation ("Made with ...").

EU LABELING

The EU Commission allows wines which have total SO₂ levels below 10mg/l and have not had any added sulfites to be labeled "**Without Added Sulfites**" or "**No Added Sulfites**", notwithstanding the respect of the EU Regulation 1169/2009 on the voluntary disclosure of alimentary ingredients (Opinion rendered to the Italian Ministry of Food and Agriculture in 2015).

INDICATIVE PROTOCOL FOR 20HL OF WHITE AND ROSE WINE IN ABSENCE OF MALOLACTIC FERMENTATION AND WITHOUT ADDED SULFITES

1. HARVEST:

Clusters must be carefully selected by the collector and grapes not good must be separated from the cluster at harvest. Harvest must be performed using only perforated plastic boxes (thoroughly cleaned). Grape must be gently laid down in the box and must absolutely not be crushed. Make sure not to have leaves, soil, branches or grass in the box.

2. LOADING GRAPES:

The transport of the grapes from the vineyard to the cellar must be expeditious but not traumatic. In case of use of closed-bottom boxes, make sure to avoid creation of musts in the loads. Grapes T° should be ≤ 20°C.

3. DESTEMMING:

Will not be performed on perfectly healthy and mature grapes that will be directly pressed, possibly at low speed

4. PRESSING GRAPES:

Fill the press and pump the run juice (must) into a thermo-conditioned tank setting the temperature around 5°C; press up to 1.2 atm.

5. ADDITION OF PECTOLYTIC ENZYMES:

Gradually add in the collection tank of the press 2g/hl of pectolytic enzymes for white wine

6. DEBOURBAGE:

When the musts has reached the temperature of 10°C, add 20g/hl of bentonite + 20g/hl of PVPP + 5g/hl of gallic tannin and remount the wine for 15-20 minutes, then let decant for 18-24 hours.

7. ANALYSIS:

Take a sample for analysis from each tank before the triggering of the fermentation and perform the following analysis: sugars, total acidity, pH; check volatile acidity every 3 days and, at the end of the alcoholic fermentation monitor the malic acid and the lactic acid.

8. PREPARATION OF THE MUST FOR THE INOCULATION:

Once the debourbage completed, decant the must and **add 1 liter of EPYCA 1 WHITE** for about 20 hectoliters of decanted must + yeasts previously rehydrated according to rehydration protocols (Pied de Cuve) and make a vigorous remontage to activate and improve the functionality of EPYCA.

9. FERMENTATION:

When the Pied de Cuve is in fermentation, add it to the rest of the mass through remontage controlling the temperature of the mixture to be similar of the on of the Pied de Cuve not to cause a thermal shock to the yeast; at the end of this operation add, by performing a similar remontage: - **the fermentation activator (20g/hl)**; - at mid fermentation **20g/hl of ammonium salts** (best salt is ammonium phosphate); - halfway through fermentation **5g/hl of grape tannin**. During the alcoholic fermentation control T ° and sugars (Babo or Brix).

10. FERMENTATION AT CONTROLLED TEMPERATURE: Keep between 16°C and 18°C.

11. TRANSFER:

Towards the end of the alcoholic fermentation (sugars around 5gr/l) decant to separate the wine from the gross lees and to further oxygenate the mass, taking care not to excessively lower the temperature. At this stage add **20g/hl of zest of yeast + 5g/hl of grape tannin**.

12. MALOLACTIC FERMENTATION INHIBITION:

At the end of the alcoholic fermentation **add 2 liters of EPYCA ML-STOP** in 20hl of wine, clarify and filtrate or make tartaric stabilization, then keep the tank sealed (in anaerobic condition to protect from oxidation).

Should you wish to delay longer the start of wine aging keep the must at 3°C until restart of the process.

13. WINE AGING:

Within 48 hours from addition of EPYCA ML-STOP **add 1 liter of EPYCA 2 WHITE** in 20hl of wine.

14. PROCESSING AND STABILIZATION:

Apply the standard procedures of stabilization, any passage in wood and the finishing of the wine without the use of sulfur products.

15. BOTTLING:

Optional addition of 1 liter of EPYCA 3 WHITE in 20hl of wine 24 hours before final filtration (0.45 micron) and bottling should the enologist desire to extend the preservation of the wine in time or should he estimate that the wine does not have sufficient anti-oxidative protection.

CATEGORICALLY OBSERVE ALL STANDARD ANTI-OXIDATIVE PROCESSES (TO AVOID EXTERNAL CONTAMINATION)

This protocol has been compiled and optimized based on tests carried out with various wine producers and the results obtained by the application of *EPYCA WHITE ML-STOP* in various types of white and rosé wines production. This protocol does not replace the know-how and skills of the winemaker and the enologist.

ADDITIONAL INFORMATION AND SAFETY

Technological effects

- ✓ Sulfur dioxide usage elimination
- ✓ Regularity/stability of the fermentation process
- ✓ Flavor protection
- ✓ Color protection
- ✓ Increase of the tartaric and proteic wine stability
- ✓ Increased flavor persistence stability
- ✓ Increased shelf life

Organoleptic Results

- ✓ Increase equilibrium of taste structure
- ✓ Brilliant color tones
- ✓ Clean, intense and persistent Aroma
- ✓ Flavor soft, voluminous and balanced

Packaging and storage

- ✓ 1 liter (0.23 gallon) HDPE-bottles, 5 liter (1.14 gallon) and 10 (2.27 gallon) HDPE-cans
- ✓ Bottles and cans to be kept properly closed to protect the product from contamination
- ✓ The product has to be stored in dry, ventilated and fresh area. Protect from freezing
- ✓ Store between 10°C (50°F) and 32°C (90°F) to avoid separation and prolong shelf life
- ✓ Stir well before use

Regulatory information/classification and labeling

Chemical substances are classified according to their physical, health, and environmental hazards. The hazards are communicated via specific labels and the Safety Data Sheets (SDS). With the GHS (Global Harmonized System) hazard communication has been standardized worldwide so that the intended audience (workers in production, emergency responders and consumers) can better understand the hazards of the chemicals in use. In the EU, the GHS principles have been laid down in the Regulation (EU) No. 1272/2008 (CLP).

According to this regulation, *EPYCA WHITE ML-STOP* is **not classified and labeled** for physical-chemical properties, for health effects and for the environment.

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