

## STANDARD OPERATING PROCEDURES

### WINE PRODUCTION OPERATIONS

SOP: Racking - Barrel to tank

SOP # 0023 DATE OF ISSUE: 1st September 2020



## OBJECTIVE

The following will form a guideline for the safe and time efficient transfer of wine stored in barrels to stainless steel storage tanks. The process is dependent on the clarity of the action delivered to the operator together with the skill set of the operator.

SOP # 0023 will form a general guideline for any and all wine racked or transferred from barrel to stainless steel tank or any designated vessel suitable to hold wine.

## PROCEDURE

Irrespective of the type or style of wine required for racking, the operating procedure needs to be clear.

1. Preemptive tasting of wine.
2. Evaluating the chemical analysis of the wine.
3. Creating detailed work orders.
4. Equipment and stock level checks
5. The racking process

## 1. PREEMPTIVE TASTING OF WINE

The decision to rack any wine from barrel must be supported by a justifiable reason for the wine's need to leave the barrel. It is advisable that before any wine is racked, that the wines are tasted either independently or in batches.

- The tasting must be scheduled at least two weeks before the action is required.
- Depending on the volume of wine produced, samples can be poured either the evening before or on the morning of the day of the tasting.
- It is always preferable to taste each barrel. In cases where sample sizes are too large due to volume considerations, you may consider batching the wine into groups as follows:

1. Individual coopers of barrels
2. The age of the barrel i.e. 1st, 2nd or 3rd fill etc.
3. The origin of the vineyard
4. Unless not blended, the original fermentation vessel
5. The pressing fraction

- The decision to taste the wines prior to racking is to ensure that any variances are clearly marked. Variances may occur due to the following reasons:
  1. A barrel exhibiting outstanding quality - in this case, it is always advisable to keep superfluous barrels separate to allow for greater blending options.
  2. A barrel exhibiting off aromas or flavors - in all winemaking, problems do occur. These problems are either a result of neglect or a series of unfortunate circumstances that result in the spoilage of the wine.
- The preemptive tasting allows you to make critical quality decisions to your winemaking practices. In certain cases, you may be saving an entire batch or vintage from possible spoilage by isolating any incorrect barrels from entering the main blend.

## 2. EVALUATING THE CHEMICAL ANALYSIS OF THE WINE

The decision to and what to analyse when racking wine is dependent on the budget of the winery as well as the availability of accredited laboratories. Regardless of how rigorous your winery analyses wines, I always insist that the following analysis is critical in order to assist your winemaking decisions.

|                        |                            |
|------------------------|----------------------------|
| TA                     | Titrateable acidity (g/L)  |
| pH                     | Hydrogen ion concentration |
| FSO <sub>2</sub> (asp) | Free Sulphur               |
| TSO <sub>2</sub> (asp) | Total Sulphur              |
| VA                     | Volatile acidity (g/L)     |

## 3. CREATING DETAILED WORK ORDERS

Regardless of the size of your winery, it is pertinent to have a detailed work order for every cellar action instituted. If your winery does not have wine production software installed, you will need to create your own cellar work orders

|                   |                                                                           |                  |                            |                      |
|-------------------|---------------------------------------------------------------------------|------------------|----------------------------|----------------------|
| <b>DATE:</b>      | 25/09/2020                                                                | <b>OPERATION</b> | Racking Cabernet Sauvignon | # 0078               |
| <b>OPERATOR:</b>  | Michael                                                                   | <b>BATCH:</b>    | Stellenbosch               | <b>BLOCK:</b> 3B     |
| <b>VESSELS:</b>   | 30 x 300L                                                                 | <b>RACK TO:</b>  | T 45                       | <b>VINTAGE:</b> 2019 |
| <b>ADDITIONS:</b> | + 20 mg/L SO <sub>2</sub> added throughout the racking                    |                  |                            |                      |
| <b>NOTES:</b>     | Ensure T 45 is gassed with CO <sub>2</sub> and that all valves are closed |                  |                            |                      |
| <b>FINAL VOL:</b> | 8900 L                                                                    | <b>REASON:</b>   | Wines racked off MLF lees  |                      |

**Table 1: Cellar work order for racking wine from barrel to tank**

## 4. EQUIPMENT AND STOCK LEVEL CHECKS

Regardless of whether your work order is produced via a winery management program or manually created, it is pertinent to check the following prior to any racking procedures:

- All additives required as per the work order are in stock and have not exceeded expiry date.
- Equipment such as cellar pumps are in working order and have been sanitized effectively.
- All tanks that will receive wine are clean and sanitized if necessary.
- All cellar lines are clean and sanitized.

It is important to note that when transferring or racking any wine that you commit to the following checks. This ensures that your wine is maintained in a clean and healthy state.

By checking your equipment and processing tools, you eliminate these variables as potential sources of infection points with your wine.

## 5. THE RACKING PROCESS

Depending on the layout of your winery, the racking process can take place under many different scenarios. For the purpose of SOP#0023, the Cabernet Sauvignon 2019 vintage is maturing in the red wine store adjacent the winery on barrel cradles. The cradles are transported between the various production stores with a forklift.

The following recommendations can be made with regards to the racking process:

- Provided the space allows for it, transport the batch of barrels to the winery at least one week prior to the action. This will allow any sediment that is disturbed by the movement to settle again. In addition, preparing to have the wine batch in the winery in advance hastens the time required to carry out the racking action.
- Once all equipment set up is complete, it is important to check that all fittings, valves and door gaskets to the receiving vessel are tight, closed and sealed. If racking between wineries, this is essential to avoid the unnecessary leakage of wine.
- In order to prevent excessive oxygen uptake at the beginning of the racking, saturate all transferring equipment (cellar lines and tank) with inert gas, preferably Carbon dioxide.
- If no gas is available, be sure to fill the cellar lines with water whereby the wine can follow in a oxygen-less environment.
- Once ready, the racking can take place to the designated vessels as per the work order.
- Always ensure when racking that only the clean wine is removed above the lees or sediment layer. The decision to incorporate the lees is dependent on the style of wine or the stage of the particular wine's life cycle. With the 2019 Cabernet Sauvignon vintage, the wine will be removed clean in order to prepare for bottling.
- As per the work order, 20 mg/L of Sulphur dioxide is required. It is preferable to add supplementary throughout the racking
- Once the racking action is complete, you can either push the remaining wine left in the cellar lines with water or by utilizing inert gas. If pushing water, rather waste wine when tasting off as opposed to collecting water with the wine.
- If the vessel is not full, ensure that the head space or ullage space is saturated with Carbon dioxide.
- Thereafter, all the barrels need to be steam cleaned with high pressure.
- All barrels will be inverted to drain excess water out with bung hole facing down.
- After 24 hours of drying, Sulphur tablets or strips must be burnt in each barrel as a form of anti microbial agent.