



Application Advice: Stuck Fermentations

Protocol for the preparation of a "Pied de Cuve" for sluggish or stuck alcoholic fermentation



Background

Alcoholic fermentation in wine is a challenge for yeast. In sluggish or stuck fermentations both the transport of sugar and nutrients into the cell, and the removal of alcohol and CO₂ from inside the cell are hindered. The causes for this obstruction are varied. In most cases it is not the often supposed lack of nutrients or nitrogen. Mostly the obstruction of the mass transport in the fermenting yeast is caused by an active inhibition and competition with other yeasts or bacteria. Particularly the metabolic products and enzymes of homofermentative MLF bacteria can obstruct mass transport in the yeast. In addition, an excess of fructose or a lack of available zinc are other possible inhibiting factors. However, a real lack in nitrogen seems rather seldom. With available nitrogen contents >130ppm no nitrogen deficiency is given.

General

- For the identification of possible causes, first analyse the basic parameters in the young wine:
 - » total alcohol
 - » residual sugar
 - » pH value
 - » total acidity
 - » lactic acid concentration
- For the preparation of a "Pied de Cuve", at least 2% of the wine to be fermented is required.
- The choice of a strong fermenting yeast is crucial, e.g. VitiFerm BIO Rubino Extra or similar pure fermentation yeast.
- To support the fermentation with trace elements and for the formation of sterols add a complex nutrient such as FermControl.

Preparation of the Wine

- If the fermentation has already **stopped completely** in the young wine, the wine should first be separated from the old yeast and toxic metabolic products should be removed. To achieve this, add 20-25g/hL ClearUp BIO and let it settle for at least 12-24 hours. Then remove it by racking. In case of a stopped fermentation with sugar levels <10g/L a coarse filtration is recommended.
- With **sluggish fermentation** simply add 20-25g/hL ClearUp BIO as an absorber and stir gently.
- In case of **filtered young wine**, it's recommended to add 20-25g/hL ClearUp BIO after racking or filtration to restore the internal surface.
- If necessary according to your analyses, lower the pH of the wine with tartaric / malic acid and add at least 30mg/L SO₂.

Yeast Preparation

- Use 50-60g/hL pure fermentation yeast (100hL = 5kg yeast).
- Reactivate according to manufacturer's recommendations. **BEWARE** of differences for industrial vs. organic yeast.
- Suspend 1:10 in dissolved sugar solution or grape juice concentrate with 20g/L sugar (e.g. 5kg yeast = 50 liters suspension).
- Add 5g FermControl per liter of suspension (250g for 50 litres).
- After 20-30 minutes the yeast suspension is activated and can be added to the "Pied de Cuve".

Preparation of the "Pied de Cuve"

- Take 2% of the wine from the tank that has been treated with ClearUp BIO (as per "Preparation of the Wine" above).
- Add 30mg/L SO₂, as well as 20g/L sugar or equivalent grape juice concentrate.
- Add 40g/hL FermControl followed by addition of the activated yeast preparation.

Allow the "Pied de Cuve" to ferment and acclimatise for 24-48 hours, then add it to the tank when the fermentation activity allows.

IMPORTANT: do not use a rotary pump!



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