HOW TO AVOID SLUGGISH/STUCK FERMENTATIONS
WITH A SOLUTION FROM ANCHOR OENOLOGY

It has been proven that up to 95% of stuck alcoholic fermentations are due to the imbalance in glucose and fructose concentrations at the end of the fermentation.

WHY IS THE RESIDUAL FRUCTOSE A PROBLEM?

- It negatively affects the wine quality, as wines may be perceived sweeter.
- Lower ethanol yield.
- Higher risk of microbial spoilage.

WHY DOES THIS HAPPEN?

Glucose and fructose are the main fermentable sugars in wine must. *Saccharomyces cerevisiae* prefers glucose over fructose, but the capacity of the yeast strain to consume fructose, is also dependent on other factors:

Nutritional and ethanol content

- Sugars are mainly consumed during the stationary phase.
- During this phase, the available nitrogen also decreases.
- Nitrogen is an essential nutrient involved in the transport of sugars into the cell via protein synthesis.
- An increased alcohol level has a stronger inhibitory effect on fructose utilisation.

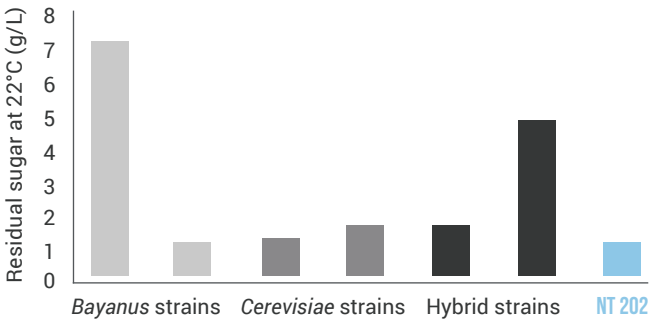
Glucose/Fructose Ratio (GFR)

- The transport of glucose is faster than that of fructose.
- A stuck fermentation is more likely when the initial GFR is less than 1.

QUESTION: How do you solve the problem?

ANSWER: A fructophilic yeast strain like VIN 13 for white wines and NT 202 for red wines?

- Ethanol has protein denaturing properties. It disrupts the plasmamembrane and shifts fructose from it easily transported pyranose form to the furanose form. NT 202 has an alcohol tolerance of 16% and VIN 13 a tolerance of 17%. This allows for the functioning of the fructose transporters at a later stage of the fermentation, even with increased ethanol concentrations.
- Due to the depletion of nitrogen and the rapid consumption of sugars, the fructose transporters are inactivated during the stationary phase. Stressful conditions like nitrogen deficiency make it more difficult for the yeast to ferment sugars towards the end of fermentation. Due to the fact that VIN 13 and NT 202 have an average nutritional demand, this impact is less severe and enhances the fructose capabilities of the yeast.



NT 202 results in one of the lowest residual sugar concentrations in a must containing 30 g/L more fructose than glucose. The performance is equal or better than other hybrid and *S. bayanus* and *cerevisiae* strains.