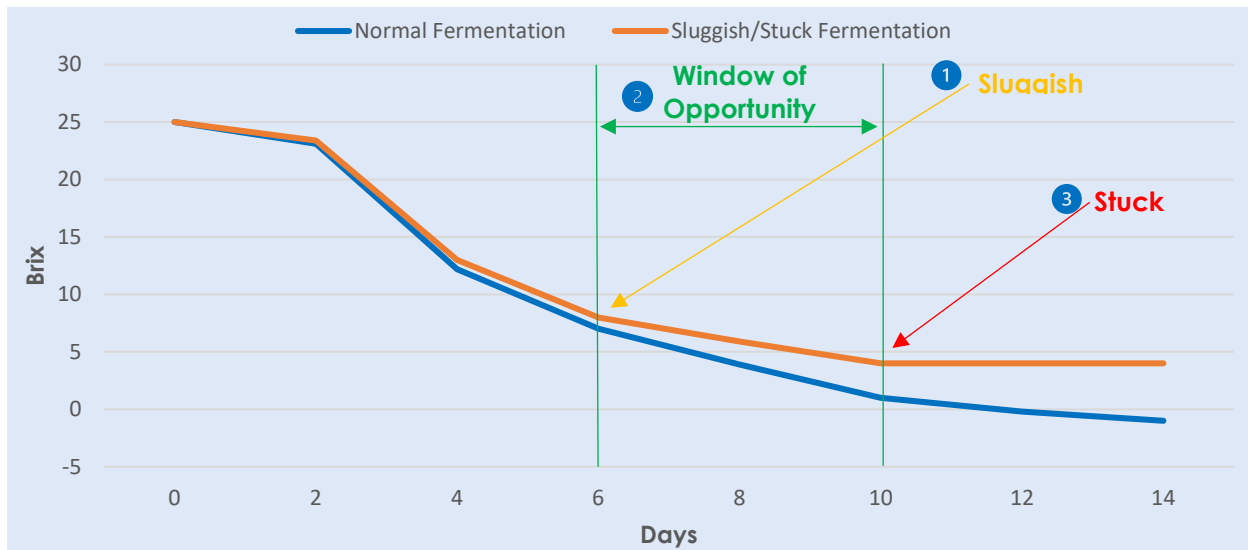


Don't let your Sluggish Fermentation Flatline

Sluggish and stuck fermentations are a headache for winemakers globally, often having a profound impact on wine quality and creating significant economic losses, not to mention being a logistical nightmare in the winery! Diligent fermentation monitoring and careful analysis of fermentation conditions can help the winemaker with early identification of problem fermentations and allow for early intervention using the right tools.



Graph 1: Fermentation curve of a normal fermentation vs a sluggish or stuck fermentation; 1) Inflection point where the fermentation slows down and becomes viability; 2) Window of opportunity: the moment in which we can act to restore yeast viability; 3) Inflection point where the yeast population is not viable anymore and the fermentation is stuck.

DIAGNOSIS: Is it stuck or is it sluggish?

It is important to understand if a problematic fermentation is sluggish or stuck because the approach involves different treatments for each.

PREVENTION: Be proactive!

Measuring and maintaining proper nutrition, selecting the right yeast (nutritional needs, ethanol tolerance, etc.), and maintaining temperature within the ideal range can all help fermentation anomalies from developing. However, vintages vary, and it can be difficult to predict what may cause yeast stress from year to year, so tracking fermentation is always critical.

- 1 The moment a fermentation becomes sluggish is a 'window of opportunity' open to the winemaker, and quick intervention may help restore yeast vitality and avoid the hassle of doing a restart later on down the line.

To ensure a successful restart of the fermentation, it is important to be aware of what compromised the fermentation in the first place. Common causes are:

- Inadequate nutrition
- High alcohol (> 14%)
- Toxins or other inhibitors
- Extreme temperatures (low or high)
- Yeast selection/low ethanol tolerance yeast

NUTRIFERM NO STOP: Nutriferm No Stop acts as a protector by improving the integrity of the yeast membrane, revitalizing yeast, and improving the growth medium. In addition, it removes medium-chain fatty acids and pesticide residues that can inhibit fermentation.

- Yeast/bacteria interaction
- Acetic acid accumulation
- Competition (MLB, Acetobacter, etc.)

EnartisStab MICRO M: Improve fermentation kinetics and ensure fermentation completion by removing spoilage microbes that inhibit yeast. EnartisStab MICRO M is an allergen-free, vegan alternative to lysozyme and SO₂.

- 2 **TREATMENT: The Window of Opportunity**
 1. Maintain temperature 15°C - 20°C (59°F - 68°F).
 2. Press off skins or rack off lees (recommended).
 3. Treat must or juice with **EnartisStab MICRO M** at 15 g/hL. Keep EnartisStab MICRO M in suspension for 30-60 minutes by mixing the must.
 4. Rack off lees 24 hours after treatment (recommended).
 5. Treat with **NutriferM NO STOP** at 30 g/hL.
 6. Track fermentation rate ($\Delta^\circ\text{Brix}/\text{day}$) and volatile acidity for the next few days.
 7. If fermentation rate increases, monitor until desired dryness is achieved.

- 3 In some circumstances, low viability and difficult conditions can prevent a sluggish fermentation from completing. In this scenario, proceed to the [Stuck Fermentation Protocol](#) (start from Step 2: *Prepare and Acclimatize Yeast*).

For more information, please contact Enartis at (707) 838-6312.