

Beyond tradition, data guided winemaking: 4 real cases with CDR WineLab®

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Introduction

Variable climate, heterogeneous grape deliveries, tight decision times. In this context, measuring critical parameters directly in the winery turns intuition into process control. The four cases below show how a few targeted analyses can change the outcome of a harvest, from preventing defects to standardizing quality.

1. Sauvignon and egg off flavor, restoring balance by starting from YAN

The winery produced a premium Sauvignon whose aromatic profile was intermittently inconsistent. Some lots showed an unpleasant egg note, especially after hot seasons on sandy soils. Must analysis revealed a lack of nitrogen, also referred to as **yeast assimilable nitrogen, YAN**, which stressed the yeast during fermentation and led to formation of unwanted sulfur compounds.

The solution was to measure the exact YAN level with **CDR WineLab®** before fermentation, so the winemaker could add only the nutrients required. The delicate Sauvignon aromas were preserved and the egg note was avoided.

Autonomous monitoring of the **malolactic fermentation** in each oak cask, without relying on external laboratories, made it possible to implement a constant and simplified control protocol.

Concrete benefit: prevention of the defect, more regular fermentations, fewer corrective actions.

2. Hidden Botrytis in incoming grapes, objective decisions with gluconic acid

A cooperative winery received grapes that looked healthy, yet crushed berries with **Botrytis** infections were often found at the bottom of bins, with consequences for color and stability. Assessing the fruit only by sugar content was misleading, since spoiled grapes can show paradoxically higher sugars.

Introducing **gluconic acid** testing at intake with **CDR WineLab®** made the presence of Botrytis visible. This chemical marker detects the infection reliably and enables an objective quality assessment.

The result was twofold. Critical lots were identified and diverted before crushing, and growers were incentivized toward more careful harvesting. The receiving line became a true control point, not a formality.

Concrete benefit: more precise raw material selection, lower risk to color, stability and fermentations, transparent alignment with suppliers.

3. Sparkling bases and lingering bitterness, managing phenolics by measuring catechins

A renowned organic sparkling producer faced one of the most subtle challenges in premium bubbles. Phenolic compounds, especially **catechins** extracted from skins during pressing, were not obvious in must but evolved during vinification, creating lingering **bitterness** and **astringency** in the finished wine. The effect was accentuated by CO₂ in sparkling wines, which amplified the sensory impact.

By using **CDR WineLab®**, the cellar implemented real time **catechin** measurements on press fractions and defined operational thresholds. Fractions that exceeded the threshold were separated and sent to dedicated treatments, such as hyperoxidation or alternative fining agents. This was critical in organic production where **PVPP** is not an option.

Concrete benefit: cleaner sensory profile in base wines, tighter control of press cuts, fewer downstream corrections.

4. Malolactic fermentation in biodynamics, early confirmation through lactic acid

In a biodynamic winery with challenges in controlling **volatile acidity**, a typical issue in biodynamic contexts, **CDR WineLab®** provided simple, fast and precise monitoring that reduced the risk of exceeding limits and safeguarded wine quality.

The same winery also needed to detect the onset of spontaneous **malolactic fermentation**, essential for microbiological stability and the wine's organoleptic profile. In biodynamics, MLF starts slowly and naturally,

which makes monitoring many tanks and barrels complex. The traditional approach, frequent measurement of **malic acid** alone, was labor intensive and often inconclusive because its early decline is slow and difficult to interpret.

The solution was simple and effective. Instead of tracking malic acid decrease, the cellar measured the **increase in lactic acid** with CDR WineLab®. A slight rise clearly signals the start of MLF, allowing the winemaker to wait a few weeks before rechecking malic acid. This analytical shift uses the most efficient progress indicator, saving time and reducing uncertainty.

Concrete benefit: early confirmation of MLF activity, fewer repetitive analyses, more confident management of volatile acidity risks.

Results, from reactive to proactive

These cases highlight the key shift from reacting to problems to **preventing** them through simple, rapid and reliable indicators measured in the winery. On site analysis puts the winemaker in control, enabling decisions based on objective measurements that consistently raise quality. Analytical technology like **CDR WineLab®** does not replace experience, it amplifies it with timely data that can mean the difference between a merely correct wine and an excellent one.

Key parameters encountered

- **YAN** in must to prevent sulfur related defects and regularize fermentation.
- **Gluconic acid** at intake to detect Botrytis and protect downstream quality.
- **Catechins** during pressing to guide press cuts and targeted treatments.
- **Lactic acid** for early confirmation of MLF onset.
- **Malic acid** for verification of MLF progress.
- **Volatile acidity** for regulatory compliance and microbiological stability.

Conclusions

Adopting rapid, reliable and easy to use analytical systems like **CDR WineLab®** supports an essential protocol that standardizes the process, reduces quality risks and improves sensory repeatability. Working with clear operational thresholds and real time measurements leads to faster decisions, fewer corrections and more value in the finished wine.



CDR WineLab® the reliable, complete and fast system of wine analyses

CDR WineLab® is a photometric analysis system, simple and fast, that enables the main tests for process and quality control of wine and must to be performed directly in the winery or in the laboratory. The system consists of an analyzer and pre-vialled reagent kits developed by CDR.

Key points

- High-sensitivity photometric technology with fixed-wavelength LED sources, excellent repeatability, and wide measurement ranges.
- Ease of use with step-by-step on-screen guidance and optimized procedures, suitable even for non-specialist staff.
- Multitasking capability to run multiple analyses in parallel on the same sample or on different batches.
- No periodic calibrations required, and maintenance is minimal.
- Disposable pre-vialed reagents, no handling of toxic or carcinogenic substances, with reduced waste.
- A broad analytical panel for wine and must, including volatile acidity, total acidity, fermentable sugars, L-malic acid, L-lactic acid, alcohol by volume, free and total SO₂, Yeast Assimilable Nitrogen, gluconic acid, pH, color (hue and intensity), catechins, IPT/total polyphenols, tannins, metals, and many more.

In summary, CDR WineLab® standardizes and streamlines analytical control at every stage of winemaking.

→ **For detailed information on methods, available analyses, and technical specifications of CDR WineLab®, visit [the official website](#).**

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