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How Solos Combines Expertise and Technology to Make Great Nonalcoholic and Low-Alcohol Wines

Wineries recognize that the quality of fully or partially dealcoholized wines depends as much on the base wine and the winemaker’s judgment as it does on the technology used

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Solos combines gentle vacuum distillation with patented aroma recovery technology to help preserve the natural aromatic character of wine during dealcoholisation.

In recent years, many wineries have worked to find the best way to remove alcohol to meet demand for nonalcoholic and low-alcohol wines made through full or partial dealcoholization. But perhaps the key to a good dealcoholized wine lies in what needs to be preserved: its aromas, its structure and the unmistakable sense of drinking wine.

Preserving those qualities is the central technical challenge for wineries making these wines. “Alcohol does more than give wine its strength. It provides much of the structure on the palate: body, richness, a touch of perceived sweetness and warmth. It also carries aromas. When you remove it, the wine can feel thin, acidity and bitterness become more pronounced, and the most volatile aromas tend to leave with the ethanol,” explains Walter Jorge Biurrun, winemaker and Iberia manager at Solos, a technology and innovation company specializing in nonalcoholic and low-alcohol beverages.

Making a good nonalcoholic or low-alcohol wine ideally means choosing both the base wine and the technology with that goal in mind, rather than simply putting a wine through dealcoholization. Many of the wineries working with Solos have embraced this thinking. “Dealcoholization amplifies both the strengths and the flaws of the base wine,” Biurrun cautions. “A flaw that goes unnoticed in a wine with alcohol becomes obvious in a nonalcoholic or low-alcohol wine.” Good wine, even without alcohol, still begins in the vineyard.

This is where a specialist partner can make a difference. Solos brings together winemaking knowledge, patented technology for recovering natural aromas and extensive experience developing nonalcoholic and low-alcohol wines. For wineries, that means support throughout the process, from choosing the base wine to the finished product.

Experience and Patented Technology

That experience has led Solos to use vacuum distillation for dealcoholization, an approach designed to put as little stress as possible on the wine. By allowing ethanol to be removed at lower temperatures, the process reduces the impact on the wine’s sensory qualities. Still, no dealcoholization process leaves a wine unchanged. Some of

the volatile compounds that define its aroma leave with the alcohol, and recovering them is part of the challenge.

Solos' patented technology uses resins to selectively capture volatile aroma compounds from the distillate produced during dealcoholization. The compounds are then released under gentle conditions and returned to the wine. Reintroducing the wine's own natural aromas helps preserve the qualities that give it its character.

To measure how well this works, Solos conducts in-house analyses using gas chromatography–mass spectrometry (GC-MS) across different wines and grape varieties. These analyses track how well the major families of aroma compounds are preserved through the process, making fidelity to the original wine something that can be measured, rather than judged by tasting alone.

The Work Behind Balance and Stability



Great nonalcoholic wine starts with quality winemaking, preserving the character, aromas and sensory experience of the original wine.

Recovering aromas is only part of the job. Alcohol also contributes structure and body, and here technology supports the winemaker's work without replacing it. While Solos' patented technology recovers and reincorporates the wine's natural aromas, balance on the palate, structure and stability depend on the winemaker's judgment. Working together, the team aims to restore "body and roundness using the tools permitted by regulations, primarily to balance acidity and astringency," Biurrun explains. "Without alcohol, wine loses a natural defense against microorganisms and oxidation, so oxygen management, hygiene and final stabilization are critical," he adds. A nonalcoholic wine that deteriorates in the bottle can undo all the work that came before it.

Practical Guidance for Winemakers

Navigating this process is no small task for a winery. To help producers make these decisions, Solos has developed its own guide, Solos Winemaking Guidelines for High Quality Dealcoholized Wine Production, bringing together scientific knowledge, practical winemaking recommendations and technical analysis. "You no longer make a wine and then remove the alcohol," Biurrun says. "You make a wine intended from the outset to be 0.0% or low in alcohol, and every decision takes into account how it will behave without alcohol."

From the Lab to Commercial Production

More than a decade of aroma research underpins this approach. It has enabled Solos' specialist division to expand internationally and dealcoholize more than one million liters of wine last year. That commercial experience allows the company to bring what it has learned in the lab to a wide range of wineries.

Bringing development, technology and production capacity together in a single process shortens the path from an initial idea to a wine ready for market. It also allows the winery's own winemaker to stay involved in the adjustments until satisfied that the result remains true to the original wine.

The same technical and winemaking expertise also supports the development of private-label products. This gives wineries a way to enter the nonalcoholic and low-alcohol wine market without developing a product from scratch, allowing them to test consumer response or expand their portfolios without a large upfront investment.

The PARAGRAPH Experience



PARAGRAPH combines carefully selected base wines with advanced dealcoholisation and aroma recovery technology to create premium wines with less than 0.5% alcohol.

One project that illustrates this approach is PARAGRAPH, which works with wines from top-tier Spanish vineyards and, more recently, cool-climate regions of France. Muga serves as a strategic partner in selecting the base wines, though the wines do not come from Muga's vineyards.

"We created PARAGRAPH to offer the pleasure and complexity of great wine to people who choose not to drink alcohol," says Duncan Shouler, PARAGRAPH's head winemaker. "Our wines contain less than 0.5% alcohol and retain the wine's natural aromas and character. We add nothing; it's just wine. Our biggest challenge at the outset was

preserving aroma, texture, structure and length on the palate, all qualities that removing alcohol can compromise, without relying on sweetness to fill the gap."

"We wanted to make dry wines that clearly express their grape variety and sense of place, with enough balance and complexity to earn a place at the table," Shouler continues. "We believe we've achieved that through careful selection of our base wines, combined with the most advanced technology to capture and preserve each wine's natural aromas and personality."

Wineries working with Solos are already earning critical recognition. USA TODAY has included Zeronimo among its best nonalcoholic wines, while Rolling Stone has recognized PARAGRAPH as the best nonalcoholic red wine. Nett's BREAKAWAY Pinot Blanc earned a Grand Gold medal at Mundus Vini. Wines developed using Solos' technology and expertise are also being served in Michelin-starred restaurants.

A Second Glass

Good nonalcoholic and low-alcohol wine takes more than a machine. It calls for a base wine made with its final purpose in mind, gentle dealcoholization, recovery of its natural aromas, precise winemaking and product development that never loses sight of the consumer. With its own facilities in Valencia and California and a network of specialist partners in Germany and Switzerland, Solos works with wineries around the world to put that approach into practice. The goal is to make nonalcoholic and low-alcohol wines that leave you wanting a second glass.