CASE STUDY

Okanagan Winery's Road to Recovery After Wild Weather Extremes

The severe weather conditions that started with harsh freezes and near-record low temperatures during the Winter of 2022, that then swung into a record-breaking wildfire season during the summer of 2023 were taxing for all areas that were affected in the Okanagan Valley.

For one winery in particular, the winter damage had impacted them so significantly that losing the very little, yet critically valuable yield they had managed to harvest was non-negotiable.

"Across 120 acres, we harvested a record low yield of fruit which resulted in a total of 3500 liters of wine. This was challenging enough, but then mix that in with a record wildfire season. At some points we couldn't see more than a meter ahead of us. Our crew were evacuated numerous times off our properties. The fires were some of the worst wildfires ever seen here in the valley," says Head Winemaker, Jacqueline Kemp from Terralux Estate Winery.

"The fruit had been so badly affected by the smoke on all our properties. Smoke taint could be smelt at the juice stage coming out of the press at low pressures. If left as it was, the juice wouldn't have been usable."

Not ready to back down from the challenge though, Jacqueline embraced the opportunity to do all that their team could to build the quality of the wine back up to where it needed to be.

Challenge

Faced with a challenging harvest, Jacqueline was determined to keep the little she had in its intended programs. She wanted to preserve the dignity of the wines and to keep them at their high-quality mark.

For both the Chardonnays and Pinot Noirs, Terralux planned to make them into sparkling wines. The reds were to be fermented then treated for smoke taint and finally blended into a Meritage.

"We were dealing with the worst-case scenario so the team wanted to trial different ways of treating smoke tainted juice and wines so that any learnings we could gain, we could look to integrate them into a protocol for the future. We needed to fix things effectively and fast. Time wasn't on our side so we decided to do what we could.

First, we had to get rid of the precursors before fermenting our sparkling wines.

The sooner we were able to remove the smoke impacts, the easier it would likely be for us to rebuild these wines. Our priority was to remove the smoke taint both aromatically and texturally for our sparkling wines early in the process."

Solution

Before determining their course of action, Jacqueline and her team tested a range of systems including **amaea VPx**. They decided to run the entire juice and wine volume through the **amaea VPx** technology.

"The bench trials showed positive results in removing the smoke taint on both the aromatics and in the palate of the juice. The fruit had been so badly impacted by smoke that we wanted to test out the heaviest treatment of the **amaea** system to see where we could get our juice to. Post treatment the sensory profile was spot on, if not enhanced, allowing us to maintain our sparkling program's desired price point of $65 per bottle."

From bench-top to treatment, the Chardonnay and Pinot Noir were treated using **amaea VPx** at the juice stage and post primary fermentation on the red wines destined for the Meritage. During the treatments, a sensory panel was engaged throughout for consistency and to provide continuous feedback.

Results

Sensory

The smoke markers across all wines were successfully reduced while the quality of the wine was retained. Each wine was able to stay in its intended, high-quality program after treatment.

Sustainable Climate Change Mitigation

Jacqueline was able to push the boundaries using **amaea's** technology to help establish protocols for climate change mitigation and management. By using **amaea VPx**, she was able to retain as much yield as possible, retain each wine's quality and mitigate losses in amongst challenging circumstances.

Winemaker Centricity and Flexibility

The customization of **amaea's** solution enabled Jacqueline to achieve her operational and quality outcomes. She was able to apply the technology within her existing protocols and was able to adjust treatment parameters to achieve desired results.

Where to Next

The sparkling wines are currently in bottle, undergoing their secondary fermentation and then they will be allowed to rest on lees for a further 3-5 years. The Meritage has now been in barrel for 12 months. While in the bottle, samples of the finished wines will be tested to understand how the wines evolved.

"For us, we were really impressed with the quality and sensory enhancement achieved using amaea's solution. I look forward to trialing the technology outside of a smoke taint year to see how we could use the technology to aid quality improvement across our wines," says Jacqueline.

Treatment Summary

Date of treatment: Sep & Oct 2023

Treatment duration: 1hr per varietal

Total volume: 4,150 liters

amaea solution: amaea VPx

Pinot Noir & Chardonnay (juice)

- **Applied dose rate:** 20 g/L
- **Applied flow rate:** 50 CV/hr

Meritage

- **Applied dose rate:** 25 g/L
- **Applied flow rate:** 20 CV/hr

How amaea VPx Works

amaea VPx is a single-pass, filtration system that uses molecularly imprinted polymers (MIPs) to remediate smoke impacted wine. Each MIP's surface contains over a quintillion binding sites designed to precisely capture the molecular compounds responsible for smoke aroma and flavor. The result is a selective process which reduces smoke impacts while preserving the quality of the wine.

Above: amaea's molecular filtration system

amaea

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Since 2003 Winesecrets have been providing America's wine producers with separation technologies that improve efficiency, eco-performance and wine quality, with unparalleled service, expertise and dedication.

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