Official newsletter
of the West Coast Smoke
Exposure Task Force

SMOKE EXPOSURE Spotlight

AUGUST 2025

This newsletter and the WCSETF website are supported by a grant from the U.S. Department of Agriculture's Agricultural Research Service.

2025 Smoke Taint Symposium Takeaways

Winegrape growers and winemakers learned firsthand the progress made on the smoke research project funded by the USDA-NIFA Specialty Crop Research Initiative (SCRI) during the Smoke Taint Symposium on June 17 in Monterey, Calif. The symposium was held in conjunction with the national conference of the American Society for Enology and Viticulture (ASEV).

The four-year grape and wine smoke research project that began in 2021 takes a systems approach to bring solutions to winegrape growers and wineries facing challenges when grapes are exposed to smoke from wildfires. The project – Assessment and Management of Risk Associated with Wildfire Smoke Exposure of Grapes in the Vineyard – is focused primarily on vineyard risk and development of mitigation tools for smoke impacted vineyards and wineries.

Led by Oregon State University's Elizabeth Tomasino, the project is a collaborative effort that includes scientists from Washington State University and University of California, Davis.

Much of the work involves applied research, which requires more time than pure discovery as field trials and replication are needed.

What follows are key takeaways from preliminary data shared during the symposium by the research team:

Predictive Air Quality Modeling
Scientists are studying smoke emissions, atmospheric aging and deposition to develop a predictive air model for smoke risk to vineyards.

- Degradation of smoke pollutants happens quickly. Risk is minimized if vineyard is 100 km (about 60 miles) from the wildfire; however, risk is dependent on several factors, including length of exposure, fuel source, temperatures and more.
- Fuel source matters. Redwoods have lower emissions than chaparral/oak than sagebrush/cheat grass and rabbit and bitter brushes.
- Sunlight speeds up degradation of volatile phenols, but nighttime slows it down. Smoldering nighttime fires can negatively impact grapes if a vineyard is nearby.
- Particulate matter measurement of 2.5 is imperfect for indication of smoke exposure in vineyards.

Vineyard Prevention and Management (Barrier Sprays and Coatings)

- Development of functional coatings is underway and looks promising in the lab, but hasn't progressed to field trials yet.
- Kaolin and bentonite as vineyard barrier sprays show reduction in uptake of smoke compounds, but must be washed off to remove the absorbed compounds. The feasibility (timing, length of protection, ease of washing) of using protective barriers is under further study.
- Network of 45 vineyard air quality sensors are collecting data for the 2025 season.

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Winery Mitigation

- Work continues to quantify free and bound smoke marker compounds.
- Tools under study to remediate impacted wine include reverse osmosis and immobilization of glycosylated enzymes.
- Lab analysis of wine is a better indicator than analysis of grapes when assessing risk, thus, small scale fermentations are always recommended – in addition to lab analysis of grapes – for potentially impacted grapes.
- Small-scale, micro-fermentations (bucket or nano Mason jars) should be followed by sensory analysis. Both correlate with bin fermentations and require less time (3-7 days versus two weeks for bins).
- Rule of thumb: Bucket fermentations will always show lower levels of smoke impact than bins because they don't retain heat during fermentation. However, the Mason jar method conducted in a sous vide bath uses heat and correlates well with bin fermentations.

Decision Support Tools for Vineyards

- Decision tree is under development to provide growers with options and considerations if grapes have been exposed to smoke.

Smoke Perception Thresholds and Consumer Preferences

- Thresholds for smoke compounds in various styles and types of wine are being determined, with pinot noir and cabernet sauvignon completed; riesling and syrah are underway.
- Consumers that like smoke flavors (in New Zealand) have a greater acceptance of smoky and ashy flavors in pinot noir.
- Descriptions of wildfire conditions on the label elicited negative emotions but did not impact liking.

Much has been accomplished by the SCRI project, but more answers are needed by winegrape growers and wineries. The SCRI project will conclude in 2026. However, the research team plans to apply for a round two grant. The West Coast Smoke Exposure Task Force continues to work closely with the SCRI smoke research team to help share project findings with the wine industry.

SYMPOSIUM RECORDING
Available for purchase at allstartapes.com/asev-76th-national-conference-2025/

Research, Support Continues for WCSETF

For the past six years, the West Coast Smoke Exposure Task Force's (WCSETF) Smoke Summit has served as a platform for sharing updates, recent findings and future initiatives on the impacts of wildfire smoke on the wine industry.

More than 350 people from 19 U.S. states and nine countries participated in the July 15 summit, hearing from leading researchers, experts and industry representatives from California, Oregon and Washington. Presenters included Arran Rumbaugh, Torey Arvik and Tim Rinehart from USDA-ARS; Tom Collins, Washington State University; Elizabeth Tomasino, Oregon State University; and Kristine Fox, Relation Insurance.

SUMMIT RECORDING
Two-hour session available for free at wcsetf.org/events/recordings/

Smoke Exposure Research Roadmap, Bulletins

Following the Smoke Signals: Elucidating the Future of U.S. Smoke Exposure Research is now available on the WCSETF website (research tab). This comprehensive, 27-page roadmap was developed by Arran Rumbaugh following a November 2024 workshop hosted by USDA-ARS and the National Grape Research Alliance. It highlights five critical research priorities developed by attendees: establishing threshold levels, rapid detection and risk assessment, atmospheric modeling, prevention strategies in the vineyard, and mitigation techniques in the winery. WCSETF will soon release a series of bulletins highlighting these priorities.

Learn More About the FIP-SI Endorsement

The Fire Insurance Protection - Smoke Index (FIP-SI) is an endorsement for grape crop insurance policies designed to provide coverage to growers against smoke damage. This endorsement provides additional protection to grape producers in counties that experience smoke events.

INSURANCE PERIOD: June 1 to Nov. 10.

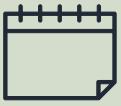
SALES CLOSING DATE AND CANCELLATION DATE
California: Jan. 31.
Idaho, Oregon, Washington: Nov. 20.

For links to USDA's FIP-SI webpage, visit wcsetf.org/industry-resources/crop-insurance/.

WCSETF WEBSITE RESOURCES

- FAQs
- Best practices
- Labs
- University resources
- Research
- Contracts
- Crop insurance
- Wildfire preparedness
- Fire apps **(new)**
- Informational videos
- News and events
- Newsletter

UPCOMING EVENTS



Events are posted on wcsetf.org/events

Unified Wine & Grape Symposium
Jan. 27-29, 2026
Sacramento

Oregon Wine Symposium
Feb. 3-4, 2026
Portland

The WCSETF originated from discussions in early 2019 between winegrape growers, winemakers, wine/winegrape industry leaders as well as related industry entities from California, Oregon and Washington. The task force held its first in-person meeting in July 2019. Since that time, the task force has convened educational webinars and produced reference materials to assist growers and winemakers with certain challenges associated with smoke-exposed winegrapes.