Official newsletter of the West Coast Smoke Exposure Task Force

# smoke exposure Spotlight

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## WEST COAST Smoke exposure TASK Force

WCSETF.ORG

## Following the Smoke Signals

Smoke exposure remains a key focus of ongoing research and industry discussions, underscoring the need for innovative solutions to safeguard winegrapes and wine.

USDA's Agricultural Research Service (ARS) in November 2024 hosted a two-day workshop — Following the Smoke Signals: Elucidating the Future of Smoke Exposure Research — at Oregon State University. The event included federal scientists, university researchers and wine/winegrape industry members.

Attendees discussed the significant challenges and continuing threat of wildfire smoke on winegrapes and wine. The workshop covered the latest science on smoke exposure, industry needs and strategies for building smoke resilience. Sessions focused on collaborating, identifying knowledge gaps and prioritizing future research on smoke mitigation.

Dr. Arran Rumbaugh, USDA-ARS in Davis, Calif., has developed a formal "roadmap" to summarize workshop outcomes and provide comprehensive information for stakeholders. The document highlights five critical research priorities developed by attendees (listed below). In the coming months, WCSETF will release bulletins that will expand on these priorities.

#### **Establish Thresholds**

- Create a database of naturally occurring levels of smoke marker compounds in grapes and wines.
- Establish threshold levels for smoke exposed grapes that lead to negative wine sensory characteristics.
- · Develop a decision matrix for grape growers

and wineries to guide actions when dealing with smoke exposure.

#### **Rapid Detection and Risk Assessment**

- Standardize analytical methodologies.
- Develop rapid screening methods that are inexpensive, portable and robust.
- Correlate smoke marker compound concentrations to sensory in wines.

#### **Atmospheric Modeling**

- Compile information to help characterize vineyard-level smoke exposure.
- Model smoke chemical composition through space and time.
- Determine if other chemical surrogates can be used for risk assessment in a vineyard during and after a smoke event.

#### **Prevention Strategies in the Vineyard**

- Understand the mechanism of smoke absorption into the grape to better develop barrier sprays to prevent smoke uptake.
- Develop strategies for genetic resistance or tolerance to smoke exposure.
- Determine the environmental and atmospheric factors that impact smoke absorption in grapevines.

### **Mitigation Techniques in the Winery**

- Develop a multi-tier mitigation approach accounting for feasibility and varying levels of smoke impact.
- Investigate the utility of newly developed selective adsorbents for phenols and thiophenols.
- Develop technologies that can biologically degrade smoke marker compounds during winemaking.

## STATE UPDATES

## CALIFORNIA

U.S. Sens. Alex Padilla (D-Calif.) and Jeff Merkley (D-Ore.), plus Reps. Mike Thompson (D-Calif.-04) and Doug LaMalfa (R-Calif.-01) in March introduced the Smoke Exposure Research Act, a bipartisan bill that would provide \$32.5 million over five years to study and address the effects of wildfire smoke on winegrapes. The bill directs the USDA's Agricultural Research Service to partner with UC Davis, Oregon State University and Washington State University to identify harmful smoke compounds, develop standardized testing methods, build a database of background smoke compounds, and establish risk assessment tools and mitigation strategies. CAWG President Natalie Collins, co-chair of the WCSETF, emphasized the bill's urgency: "Continued investment in research is essential to help growers and wineries make science-based decisions that protect their livelihoods."

#### Press release

# WASHINGTON

Washington State University (WSU) has been using portable smoke hoop houses to simulate smoke events since 2016. These hoop houses have provided smoke impacted grapes for many projects and fruit to make smoke impacted wine. WSU coordinates a multitude of smoke research funded by the Washington wine industry, USDA-NIFA Specialty Crop Research Initiative and cooperative agreements with USDA ARS. The WSU smoke research team includes 11 students (undergrad and graduates), one high school teacher, one research scientist, two post-doctorate assistants and five lead scientists from USDA-ARS and WSU. This summer, five smoke exposure trials are planned, starting in early July. Each exposure represents time spent to collect, dry and pelletize native plant material for the smoking fuel and several days to set up and take down the hoop houses.



Oregon State University (OSU) is leading research on the impact and mitigation of wildfire smoke in Oregon wines. A project by Dr. Elizabeth Tomasino is exploring how consumers perceive smoke-impacted wines through sensory analysis. OSU has also established a dedicated analytical chemistry lab focused on developing advanced methods to measure smoke-related compounds, including bound phenols for baseline measurements and thiophenols - a newly identified class of flavor compounds linked to smoke exposure. Additionally, research efforts are testing the chemical effectiveness of grape coatings as a preventative measure to reduce smoke uptake in grapes before harvest. These efforts aim to provide practical tools and insights for the wine industry to better understand, detect and manage the effects of smoke on wine quality.

# IDAHO

The Idaho Wine Commission (IWC) currently has a pass through grant with the University of Idaho (U of I) that focuses on vineyard health and education to increase grape growing in the state of Idaho. Since 2021, the U of I has been sampling and testing soil from multiple vineyards using physical parameters, linked chemical/biological parameters (using the Haney Soil Health Test) and biological community metrics (nematodes as soil health indicators). This grant partnership will conclude on June 30, 2025 and final results of the research will be provided by the U of I. The IWC relies heavily on the research conducted by the Northwest Center for Small Fruits (NWCSF). They currently have 14 research products related to viticulture. A representative from the NWCSF presents research updates to the IWC on a regular basis.



WCSETF 2025 Smoke Summit Tuesday, July 15 11 a.m. - 1 p.m. PT



## **RECENT ARTICLES**

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## Advanced research and mitigation strategies at the 2025 ASEV Smoke Taint Symposium (5/22/25)

<u>Vineyard Armor: Developing solutions to</u> protect wine grapes from wildfire smoke (4/8/25)

UC researchers study smoke risk to vineyards from prescribed grassland fires (3/27/25)

## UPCOMING EVENTS



## Events are posted on wcsetf.org/events

ASEV 2025 National Conference June 16-19, 2025 • Monterey, CA

WCSETF 2025 Annual Smoke Summit Via Zoom July 15, 2025 / 11 a.m. – 1 p.m.

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

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 wine grapes.