Type them into questions box!

“Why am I muted?”
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How Wildfire Smoke Impacts the Quality of Wine

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How Wildfire Smoke Impacts the Quality of Wine

ELIZABETH TOMASINO
Associate Professor of Enology, Oregon State University

GAVIN SACKS
Professor and Associate Chair in Food Science, Cornell University

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Incidences of wildfires are increasing
Exocarp
sugars: 25%
organic acids: 35%
aromas: >80%
phenolics: 20-30%
K+: 30-40%

Mesocarp
sugars: 50%
organic acids: 35%
aromas: <20%
phenolics: 10-20%
K+: 20-30%

Endocarp/seeds
sugars: 25%
organic acids: 30%
phenolics: 60%
K+: 20-30%
Free smoke compounds $\text{OH} \quad \text{OCH}_3$

Bound smoke compounds

$\text{+}$

Total smoke compounds
What is the main difference between red and white winemaking?

- Different grapes are used
- Grape skins are removed at different times
- Final alcohol content
- Grapes are bigger
- Nothing

* If your answer differs greatly from the choices above tell us in the chat!
UPTAKE AND RELEASE OF SMOKE TAINT IN GRAPEVINES

The above sequence is responsible for the uptake and release of smoke taint in grapevines. Sugars are added by a process called glycosylation and are cleaved off again during fermentation.
Which of the below is NOT an aroma compound?

- Limonene
- Ethyl butyrate
- Cresol
- Catechin
- B-ionone

* If your answer differs greatly from the choices above tell us in the chat!
2020-2022
Identification of unknown compounds related to smoke exposure

2020-2021 Smoke Sensory

- Carry over effects of smoke sensory analysis
  - Timing & rinses to remove this effect
  - Running now!

- What percentage of bound compounds are released in the mouth
  - Done in model solution with both bound & free aroma compounds
  - Spring 2021

- Compound interactions for smoke perception
  - Spring/summer 2021
Grape Coatings to prevent smoke adsorption
• With Yanyun Zhao, Alec Levin and Mike Penner, OSU

Volatile Phenol degrading pathways
Chris Curtin, OSU
Micro-oxygenation of smoke compounds

• James Osborne, OSU
• Elizabeth Tomasino, OSU
• Cole Cerrato, OSU

• Take Aways
  • Understand the complexities of grape smoke exposure both from chemistry and sensory standpoint
  
  • We gave prevent/mitigate this issue, it will just take some time
  
  • Wineries will never release low quality products, although wines may be limited on heavy wildfire years
Many people to Thank!

- Dr. James Osborne
- Aubrey DuBois, RFA
- Dr. D. Cole Cerrato
- Lindsay Garcia
- Jenna Fryer
- Trung Tran
- Industry Partners!

American Vineyard Foundation
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Contact me with any questions,
Elizabeth.Tomasino@oregonstate.edu
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