



Smoke Exposure Testing

As wine regions around the world face the immediate effects of devastating fires, the threat of smoke exposure is of concern. Wildfires and controlled burns generate smoke particulates that could be taken up by the berries and leaves of grapes in nearby vineyards.

While the chemical composition of smoke from wood pyrolysis is rather complex, free volatile phenols (VPs) are believed to be the major aroma compounds that confer the smoke exposure characteristics to grapes and wines. In the vineyard, these VPs can permeate the grape skins and rapidly bond with the sugars inside to form molecules called glycosides. Once the grapes are fermented, the acidity in the resulting wine will begin to break these bonds (even after bottling), rendering the phenols volatile and releasing their smoky flavor once again.

Wines made from smoke-exposed grapes can present undesirable sensory attributes identified as ashy or smoke-exposed with reduced palatability and market acceptance.

IEH Analytical Laboratories in Seattle, WA offers expedited volatile phenol testing services to the wine industry:

- Matrices: berries, micro-ferments, and wine
- Markers -volatile phenols (VPs)-Guaiacol and 4-Methylguaiacol
- Method: GC-MS/MS
- Reporting limit: 0.5 to 1 ppb
- Turn-around time (TAT): 5 days
- **Rush services available**





Pricing for smoke exposure testing services is as follows:

Matrix	#Samples	Price/sample
Berries	1	\$195
Berries	2 to 10	\$190
Berries	11+	\$180
Micro-ferment (bucket-ferment)	1 to 9	\$150
Micro-ferment (bucket-ferment)	10+	\$135
Wine	1 to 9	\$150
Wine	10+	\$135

Sampling:

- Berries - A representative sample of 200 to 400 berries taken from at least 20 to 40 vines should be collected in the vineyard.
- Micro-ferment (bucket-ferment) - 60 mL (sealed headspace free plastic containers)
- Wine - 60 mL ((sealed headspace free plastic containers)

Please let us know how we can help you with your needs. IEH Laboratories & Consulting Group is pleased to be of assistance with any of your organization's service needs.

For additional information, please contact:

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