



# PERSPECTIVES

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## **Valuation of Wine Inventory: When Wine Goes Up in Smoke**



Our perspectives feature the viewpoints of our subject matter experts on current topics and emerging trends.

## INTRODUCTION

California wine country has been devastated by multiple wildfires in recent years, and the region will likely experience more fires for years to come. Wineries are impacted by the fires in many ways, but some of the most sizeable and complex claims relate to the destruction/damage of wine inventory.

The purpose of this paper is to:

- Examine how wine inventory can be impacted by fires
- Discuss the approach we take when valuing wine inventory
- Review some of the complications we often encounter with this variety of claim

We will also address a common coverage issue and significant changes in the California wine insurance market.

## BACKGROUND

Starting in the early hours of August 16, 2020, Northern California experienced a weather phenomenon, described by a state fire official as “a historic lightning siege.”<sup>1</sup> Over a 72-hour period, California was hit with nearly 11,000 bolts of lightning that triggered fires engulfing over a million acres of land (referred to as LNU Complex fires).<sup>2</sup>

One of the regions most affected by the fire is the famous California wine country of Napa and Sonoma. The LNU Complex fires includes multiple fires burning in the region, has caused thousands of people to evacuate, and, so far, has damaged almost 1,500 structures.<sup>3</sup>

The region is no stranger to dealing with wildfires, having experienced several substantial wildfires over the last few years, including:

- The Tubbs Fire, in October 2017, which burnt 36,810 acres and resulted in estimated economic losses (per the California Department of Insurance) of over \$10 billion.

- The Kincade Fire, in October 2019, which burnt 77,758 acres and resulted in estimated economic losses of \$725 million.

Other California winegrowing regions have also been impacted by wildfires in recent years, including:

- Carmel Valley, which was impacted by the Soberanes Fire in August 2016.
- Santa Barbara, which was impacted by the Thomas Fire in December 2017.

These wildfires represent some of the largest and most destructive in state history,<sup>4</sup> with experts attributing them to the effects of climate change, increased development, and unsuccessful fire management strategies.<sup>5</sup> Whatever the reason, wildfires are likely to continue to impact California wineries in years to come.

The wildfires result in a wide variety of claims including business income losses, property damage, extra expense, crop damage, and inventory losses. This article will address claims related to the impact of the fire on wine inventory.

## WHAT CAN HAPPEN TO WINE DURING A WILDFIRE?

Wine does not have to be destroyed outright to be affected by a fire. In fact, the wine-making process can be impacted in several other ways.

### Smoke Taint

The most common issue we see leading to wine related claims after a wildfire event is smoke taint. Simply put, this means the wine tastes “smokey” with an “ashy” aftertaste. Although there is no evidence this is harmful to consumer’s health, unsurprisingly, a blind sensory study described by the Australian Wine Research Institute showed that “consumers gave very low liking scores for a smoke affected wine compared to an unaffected wine.”<sup>6</sup> Wine tasters often describe the flavor as that of burnt rubber, or akin to licking an ash tray.

<sup>1</sup><https://abcnews.go.com/US/11000-lightning-strikes-72-hours-ignite-300-fires/story?id=72467148>

<sup>2</sup><https://www.nytimes.com/2020/08/21/us/california-wildfires.html#link-c180404>

<sup>3</sup><https://www.kcra.com/article/Lnu-lightning-complex-wildfire-september-4/33928096#>

<sup>4</sup><https://www.latimes.com/projects/wine-country-fires-california-sonoma-napa/>

<sup>5</sup><https://www.nytimes.com/article/why-does-california-have-wildfires.html?action=click&module=Top%20Stories&pgtype=Homepage>

<sup>6</sup><https://www.awri.com.au/wp-content/uploads/2020/02/Sensory-impact-of-smoke-exposure.pdf>

In some cases, the winery may attempt to filter and process the wine to remove the smoke taint; however, this process can also affect the quality of the wine. Ultimately, if the wine is significantly smoke tainted, the winery may not want to sell the wine under their labels.

## How Does Smoke Taint Occur?

Smoke taint can occur as a result of direct contact with smoke residue or through contact with aroma compounds released by fires. The aroma compounds, known as volatile phenols, permeate grape skins and bond with sugars in the grape to form glycosides. The glycosides do not have a smokey aroma;<sup>7</sup> however, during fermentation (and over time when barreled or bottled), the glycosides break down, releasing the phenols and the smokey flavor. As a result, the smoke taint may not be detected for months or even years after the loss event.

Whether or not grapes become smoke tainted can be impacted by a variety of factors, including:<sup>8</sup>

- Grapevine growth stage
- Grape varietal
- Smoke composition
- Length of smoke exposure

## How Is Smoke Taint Detected?

In most incidences, smoke taint is initially detected when the wine is sampled by the in-house winemaker at the winery. After smoke taint has been detected, the winery typically sends samples to a third party for testing, where they will test for six volatile phenols that lead to the smoke taint.

In some circumstances, a third party may also be asked to conduct a taste test of the wine to provide a description of the palatability of the wine as well as the level of perceived smoke taint. This is particularly common in situations where the third-party testing only shows a “mild” level of smoke taint based on the phenol markers.

## Other Possible Effects of the Wildfires on Wine

Grapes used in winemaking can also be impacted in the following ways:

- Wineries in California typically harvest their grapes during peak wildfire season (August through October). If a winery is subject to an evacuation order they may have to abandon the harvest and leave the picked grapes sitting out at the winery. Even if these grapes are not impacted by smoke taint, they can spoil if left for too long. This can be a result of:<sup>9</sup>
  - Over ripened grapes
  - Rotten grapes
  - Pests
- Grapes and wine can both be impacted by high temperatures. This can occur due to the wine being in close proximity of the fires or as a result of power outages that shut down cooling systems in a winery. Exposure to heat can change the sensory characteristics of a wine, and excessive heat can result in the wine having a cloudy appearance, even causing bottles to leak.<sup>10</sup>

## KEY STEPS TO VALUING WINE

In most incidences, we will take the following steps to value wine:

### 1. Verify the Existence of the Wine

Our first step is to review the grape weigh tags for the impacted wine. This allows us to verify both the volume of the wine and the grape varietal.

<sup>7</sup> <https://www.winespectator.com/articles/understanding-smoke-taint-in-wine>

<sup>8</sup> <https://www.winespectator.com/articles/when-bad-things-happen-to-good-grapes-2234#:~:text=Acidity%20is%20key,aggressively%20tart%20or%20even%20sour%20https://www.kcra.com/article/nu-lightning-complex-wildfire-september-4/33928096#>

<sup>10</sup> <http://www.academicwino.com/2012/05/evidence-for-damaging-effects-of-heat.html/#:~:text=It%20is%20well%20known%20that,brownish%20appearance%20and%20leaking%20bottles>

**What Is a Weigh Tag?**

During a normal harvest, after grapes have been picked from the vine, they will be taken to a weigh station where they will be weighed, and a weighmaster certificate (commonly known as a “weigh tag”) will be produced, showing information including the weigh date, grape varietal & appellation, and net weight.

**Weighmaster Certificate Requirements**

1) Preprinted Consecutive Number (Here)

2) WEIGHMASTER CERTIFICATE		
THIS IS TO CERTIFY that the following described commodity was weighed, measured, or counted by a weighmaster, whose signature is on this certificate, who is a recognized authority of accuracy, as prescribed by Chapter 7 (commencing with Section 12700) of Division 5 of the California Business and Professions Code, administered by the Division of Measurement Standards of the California Department of Food and Agriculture.		
3) Weighmaster: Bob's Vineyard Management 3985 Highway 29 St. Helena, Ca 94574	4) Weighed for:	6) Vehicle and/or trailer ID:
5) Weighing Location:	8) Common tare code or container description:	
7) Commodity: Wine Grapes	9) Number of Containers:	11) Date:
Varietal:	10) Deputy Weighmaster Signature:	
12) Gross Lbs: 13)	Tare Lbs:	Net Lbs:

Figure 1 - Sample weighmaster certificate

**Why Are Weigh Tags Important?**

The weighing process is heavily regulated, and weight tags are mandated for all California wineries by both the Alcohol & Tobacco Tax & Trade Bureau (“TTB”) and the California Alcoholic Beverage Control (CA ABC).

Weighing scales must have a “Legal for Trade” designation and must be registered with the local agricultural office, and the “weighmaster” must be licensed by the state.<sup>11</sup>

The TTB considers a weigh tag a “source document” and will use them as documentation in the event of an audit of a bottled wine, which tracks the wine’s details back from the wine label to the weigh tags.<sup>12</sup>

It should be noted that when valuing wine, we also review inventory records and tank reports; however, for the reasons above, the weigh tag is considered a key source document.

**2. Determine the Impacted Wine Program**

To establish the projected selling value of the wine, we first must establish which program the wine would have been allocated to. The “wine program” is the term for what you see on the label of the wine and will often specify the vineyard, if the wine is a single vineyard, or may have a blend name if the wine is from multiple vineyards.

The following are examples of single vineyard vs. blend labels:

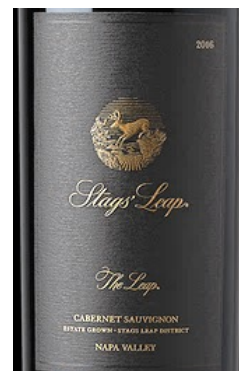


Figure 2 - Stags' Leap, The Leap, Estate Grown Napa Valley, Cabernet Sauvignon--Single Vineyard

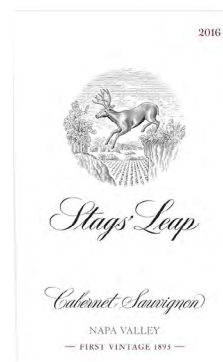


Figure 3 - Stags' Leap, Napa Valley, Cabernet Sauvignon--Blend of multiple vineyards

<sup>11</sup> <https://www.winebusiness.com/wbm/index.cfm?go=getArticle&dataId=89072>

<sup>12</sup> <https://winecompliancealliance.com/connecting-your-grape-weigh-tags-to-your-wine-labels/>

If the wine has already been bottled at the time of loss, this analysis is not necessary, as the wine is already in a bottle with a label, so nothing is up for debate. However, if the grapes/wine were destroyed or the wine is still in the tank or barrel, it is necessary to determine the program allocation. Our role involves scrutinizing the insured's projected allocation to see if it is consistent with:

- Blending plans for that wine program and vintage
- Blending reports for prior vintages of the same program
- Comparable grapes blended in the allocated program.

In some cases, the insured is able to provide a blending history showing that grapes harvested from the impacted vineyard and block have been used in the same wine program for several years, making it relatively easy to project the program allocation.

In other cases, things can get more complicated, as illustrated in the following scenarios:

- The insured claims that the impacted wine would have been allocated to their highest value wine program; however, historically, the wine was used in a much lower value program.
- The insured purchased the impacted grapes from another winery and has never purchased these grapes before, so there is no blending history.
- The insured claims they were going to start a new wine program where the impacted wine would have been used. In this case there would be no blending history for the program.

### 3. Calculate Sales Value & Unincurred Costs

Most insurance policies state the wine should be valued at "projected sales value less unincurred costs."

#### Projected Sales Value

Once we have established the program allocation (see Step 2), we then review sales records for the applicable wine program. This is to establish both the average selling price of the wine and the sales channel.

Wine is sold through different sales channels that are typically categorized as:

- Direct to Customer (DTC), i.e. sales via tasting room, wine club, online, tele-sales, etc.
- Wholesale, i.e. sales to wholesalers including restaurants, grocery stores, etc.

Typically, prestigious and expensive wines will be sold entirely through DTC channels. As the wines reduce in quality and price, more is sold through wholesale channels.

Determining the sales channel is important, as DTC wine will achieve a higher price than wine sold via wholesale channels. This can become a contentious issue if the insured claims that the impacted wine vintage would have a different DTC v. wholesale allocation compared to previous vintages of the same wine. For example, they may argue that due to an aggressive marketing campaign, they would have sold more of the wine through their online shop.

#### Unincurred Costs

To calculate unincurred costs we review both production and selling costs. Where the wine is in the production process will dictate the unincurred costs we need to review. For example, if the wine had already been bottled, we will focus on selling expenses. If the wine was in the barrel, we will need to include the costs to bottle and any costs that would be incurred while the wine was in barrel.

Unincurred production costs may include the cost of the barrel, bottle, label, cap, and cork. We may also consider barrel aging supplies, variable labor costs, and any mobile bottling line costs.

Unincurred selling costs depend on the applicable sales channel, and examples include:

- DTC channel—credit card fees, discounts, staff sales bonuses
- Wholesale channel—commissions, allowances, freight

Ultimately, our goal is to establish the net loss to the insured based on projected sales price less any costs that the insured did not incur by not producing the wine.

## ADDITIONAL CONSIDERATIONS

### Library Wines

In some cases, the impacted wine is categorized as a library wine. Library wines are bottles/cases of a vintage that are held back by the wineries after the debut, to be released at a later date.

With library wines, there is often limited sales data, and the projected sales price of the wine can be highly subjective. There is also the possibility that older wine may have spoiled, raising issues of obsolescence.

In these instances, we will look at all available sales data and, in some cases, it is appropriate to appoint a wine expert to assist with the valuation.

### Mitigation Efforts

In some instances, if the wine is smoke tainted/heat damaged, it may still be sellable, especially if there is only a mild impact on the taste. This wine can be:

- Used in a lower value wine program (especially if smoke taint is minor and/or the quantity of wine is small)
- Sold on the bulk wine market

Bulk wine is defined as a wine that is shipped in large containers such as tanks (rather than bottles) and then repackaged at its destination.<sup>13</sup> Buyers of bulk wine typically include other wineries, exporters, or grocery stores with “home brand wines.” In some cases, bulk wine can be used to make food products like wine vinegar.

Unsurprisingly, sales prices for bulk wine are typically significantly lower than normal channel prices. Furthermore, there is currently a significant oversupply in the bulk wine market, known as the “Great Grape Glut,” with prices at all-time lows. As a result, it can be relatively difficult for wineries to sell wine with quality issues.

## COVERAGE COMPLICATION

In smoke taint losses, the most common coverage complication we see relates to the location or “status” of the grapes at the time of loss, primarily whether they were on the vine or picked when the smoke taint occurred.

Policy wording can vary, but disputes often center on whether the wine falls under “crop” or “inventory” coverage. The valuation differs materially between classification of “crop” (lower value) and “inventory” (higher value).

To assist with coverage determination, we can look at the grape weigh tags to approximate the date the grapes were picked, as the grapes are usually weighed within 24 hours of being picked. The following scenario is an illustration of this:

- The Kinkade fire occurred on October 9, 2017.
- On October 30, 2017, a winery detects smoke taint in their wine.
- If the weigh tag is dated prior to October 9, 2017, we would accept the grapes were picked prior to the loss and the smoke taint occurred after the grapes had been picked.
- If the weigh tag is dated after October 9, 2017, we would assume the grapes were on the vine when the smoke taint occurred.

## NOTABLE CHANGES IN THE CALIFORNIA WINE INSURANCE MARKET

Prior to 2019, the California wine industry had looked to Lloyds of London for inventory throughput policies. However, in July 2019 Lloyds announced that it would no longer be underwriting these policies because of the annual risk to wine production and storage caused by wildfires.<sup>14</sup>

<sup>13</sup> <https://ibwsshow.com/en/blog/insights-64/why-bulk-wine-is-now-so-important-to-the-us-and-global-wine-market-97.htm>

<sup>14</sup> <https://www.sonomanews.com/article/business/why-lloyds-of-london-likely-wont-be-last-insurer-to-california-wineries-o/?sba=AAS&artslide=2>

Specifically, Lloyds said it would no longer insure “wine grapes on the vine, wine in production and the finished product up until a winery releases custody and control.”<sup>15</sup> The decision was a result of a strategic review of unprofitable lines that was conducted by Lloyds after it suffered \$2.6 billion of losses in 2017.

Lloyd’s actions have put pressure on the domestic markets to respond, but according to Elizabeth Bishop of Heffernan Insurance Brokers, “many are saying they cannot offer the coverage until they’ve renewed their reinsurance treaties and renegotiated them so that they can respond to higher values.”<sup>16</sup>

Furthermore, the aggregation of risk in the Napa and Sonoma wine regions means that one wildfire can result in a catastrophic loss event. Specifically, in Napa & Sonoma there are over 800 wineries that produce approximately 50% of retail value for California while their production accounts for less than 10% of the state’s total.<sup>17</sup>

All these issues have resulted in significant increases in policy rates, particularly for large, high-end wineries with extremely valuable inventory. As a result, wineries have been forced to take on higher deductibles and many will likely consider using dollars they would have spent on insurance policies, for fire mitigation tools.<sup>18</sup>

## CONCLUSION

In addition to destroying wine inventory, wildfires can impact wine/grapes through smoke taint, spoilage, or heat damage. We most commonly see claims relating to wine that has been impacted by smoke taint and which cannot be sold through normal sales channels.

We typically take the following key steps to value wine inventory:

- Verify the existence of the wine through review of weigh tags and inventory reports
- Determine the impacted wine program through review of blending reports
- Calculate sales value and unincurred costs
- Review mitigation efforts made by the insured to sell the wine

If the wine we are valuing is a library wine with limited sales data, it may be necessary to involve a wine expert to assist with the valuation.

A common coverage issue to be aware of relates to the “status” of the grapes at the time of loss and whether they were on the vine when smoke taint occurred or if they had already been picked. This can determine whether they would be categorized as “crop” or “inventory” as it concerns potential disputes.

Finally, due to the annual devastating wildfires and the aggregation of risk in Napa and Sonoma, Lloyds of London announced in 2019 that it would no longer be underwriting California wine inventory policies. As such, the wine insurance industry is undergoing substantial change, resulting in significant increases in policy rates and even prompting some wineries to self-insure.

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<sup>15</sup> <https://www.sonomanews.com/article/business/why-lloyds-of-london-likely-wont-be-last-insurer-to-california-wineries-o/?sba=AAS&artslide=2>

<sup>16</sup> <https://www.insurancebusinessmag.com/us/news/breaking-news/lloyds-of-london-hard-stop-leaves-californian-wineries-in-total-crisis-175188.aspx>

<sup>17</sup> <https://www.insurancebusinessmag.com/us/news/breaking-news/lloyds-of-london-hard-stop-leaves-californian-wineries-in-total-crisis-175188.aspx>

<sup>18</sup> <https://www.sonomanews.com/article/business/why-lloyds-of-london-likely-wont-be-last-insurer-to-california-wineries-o/?sba=AAS&artslide=2>

## REFERENCES

- ABC News. Nearly 11,000 lightning strikes in 72 hours ignite more than 300 fires in California. (August 19, 2020). Retrieved from: <https://abcnews.go.com/US/11000-lightning-strikes-72-hours-ignite-300-fires/story?id=72467148>
- The New York Times. No End in Sight as Blazes Keep Growing in California. (August 21, 2020). Retrieved from: <https://www.nytimes.com/2020/08/21/us/california-wildfires.html#link-c180404>
- KCRA. LNU Lightning Complex: All evacuation orders lifted. (September 6, 2020). Retrieved from: <https://www.kcra.com/article/lnu-lightning-complex-wildfire-september-6/33936007#>
- Los Angeles Times. We mapped every wine country fire. They're larger and more destructive than ever. (November 7, 2019). Retrieved from: <https://www.latimes.com/projects/wine-country-fires-california-sonoma-napa/>
- The New York Times. Why Does California Have So Many Wildfires. (September 10, 2020). Retrieved from: <https://www.nytimes.com/article/why-does-california-have-wildfires.html?action=click&module=Top%20Stories&pgtype=Homepage>
- The Australian Wine Research Institute. Sensory impact of smoke exposure. (February 2020). Retrieved from: <https://www.awri.com.au/wp-content/uploads/2020/02/Sensory-impact-of-smoke-exposure.pdf>
- Wine Spectator. Understanding Smoke Taint. (November 3, 2017). Retrieved from: <https://www.winespectator.com/articles/understanding-smoke-taint-in-wine>
- The Australian Wine Research Institute. Smoke Taint. (2020). Retrieved from: [https://www.awri.com.au/industry\\_support/winemaking\\_resources/smoke-taint/](https://www.awri.com.au/industry_support/winemaking_resources/smoke-taint/)
- Wine Spectator. When Bad Things Happen to Good Grapes. (2020). Retrieved from: <https://www.winespectator.com/articles/when-bad-things-happen-to-good-grapes-2234#:~:text=Acidity%20is%20key,aggressively%20tart%20or%20even%20sour>
- The Academic Wino. Evidence for Damaging Effects of Heat Exposure on Wine During Transport and Storage and Recommendations for Protection. (May 15, 2012). Retrieved from: <http://www.academicwino.com/2012/05/evidence-for-damaging-effects-of-heat.html/#:~:text=It%20is%20well%20known%20that,brownish%20appearance%20and%20leaking%20bottles>
- Wine Business Monthly. Product Review: Grape Scales - Choosing the right scale for your winery. (May 2011). Retrieved from: <https://www.winebusiness.com/wbm/?go=getArticleSignIn&dataId=89072>
- Wine Compliance Alliance. The compliance of connecting your grape weigh tags to your wine labels. (August 9, 2016). Retrieved from: <https://winecompliancealliance.com/connecting-your-grape-weigh-tags-to-your-wine-labels/>
- International Bulk Wine & Spirits Show. Why Bulk Wine is Now So Important to the US and Global Wine Market. (2020). Retrieved from: <https://ibwsshow.com/en/blog/insights-64/why-bulk-wine-is-now-so-important-to-the-us-and-global-wine-market-97.htm>



- Sonoma Index-Tribune. Why Lloyd's of London likely won't be last insurer to California wineries over rising fire risk. (November 15, 2019). Retrieved from: <https://www.sonomanews.com/article/business/why-lloyds-of-london-likely-wont-be-last-insurer-to-california-winerries-o/?sba=AAS&artslide=2>
- Insurance Business America. Lloyd's of London hard stop leaves Californian wineries in "total crisis." (August 13, 2019). Retrieved from: <https://www.insurancebusinessmag.com/us/news/breaking-news/lloyds-of-london-hard-stop-leaves-californian-winerries-in-total-crisis-175188.aspx>

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