

## Version 4

# *Managing a Wine Cellar Using a Spreadsheet*

*By Gary Thompson*

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### EXECUTIVE SUMMARY

Using examples from Version 4 of Wine Cellar Management Tool, this report describes the many spreadsheet-based analyses in this tool that can assist an individual, restaurant, or bar in managing a wine cellar. The primary motivation for developing Version 4 was to expand the capability of the tool to assist cellar owners in making decisions about how to manage a purposeful decrease in the size of their cellars. In addition to providing insight into the key questions of what to consume and what to promote, the tool shows such interesting and informative analyses as appellations, vintages, and types of wine. In the tool described in this report, the spreadsheet itself incorporates form-based sets of data entry fields. The Wine Cellar Management Tool Version 4, which is available at no charge from The Center for Hospitality Research at Cornell University, does not require actual knowledge of how to construct a spreadsheet. It does require diligent data entry regarding wine purchases and withdrawals.

#### **Keywords**

Restaurants, wine cellars, spreadsheets, wine cellar management

#### **Disciplines**

Business, Food and Beverage Management, Hospitality Administration and Management

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## ABOUT THE AUTHOR



Gary M. Thompson is a professor of operations management in the Cornell School of Hotel Administration, where he teaches graduate and undergraduate courses in service operations management. Prior to joining Cornell in 1995, he spent eight years on the faculty of the David Eccles School of Business at the University of Utah. He holds a BSc with first-class honours from the University of New Brunswick, an MBA from the University of Western Ontario, and a PhD in operations management from The Florida State University. His current research focuses on restaurant revenue management, food and beverage forecasting in lodging operations, workforce staffing and scheduling decisions, wine cellars, scheduling conferences, and course scheduling in post-secondary and corporate training environments. His research has appeared in the Cornell Hospitality Quarterly, Decision Sciences, the Journal of Operations Management, the Journal of Service Research, Management Science, Naval Research Logistics, Operations Research, and other journals. He has consulted for several prominent hospitality companies and is the founder and president of Thoughtimus® Inc., a small software development firm focusing on scheduling products. From July 2003 through June 2006 he served as executive director of the school's Center for Hospitality Research.

**Version 4**

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**T**his report serves as a companion piece for the “Wine Cellar Management Tool, Version 4,” hereafter referred to as the “Tool.” Although the Tool is based on a spreadsheet, it requires only data entry in predefined forms within the spreadsheet. The spreadsheet calculations underlie the resulting analyses. In addition to the blank spreadsheet that you can use, I have posted a sample spreadsheet containing data. As you read this report, you may wish to consult that sample spreadsheet.

The original version of the Wine Cellar Management Tool was released by The Center for Hospitality Research in May 2009. Version 2 of the tool, which contained a number of enhancements, followed in August 2010. The related 2009 CHR Report “Managing a Wine Cellar Using a Spreadsheet 2.0” described how a spreadsheet can be used to help manage a wine cellar, either for individuals or for firms such as restaurants or bars. It showed that if one is disciplined about recording the inflows and outflows to and from the cellar, there are a large number of cellar analytics that are interesting and informative, and that can be used to help guide cellar management decisions, such as what to consume or what to promote. Versions 3 and 3.1 of the Tool, which added new functionality, were released in April 2016. The report associated with Versions 3 and 3.1 only provided information on features new to those versions. The current document is intended as a replacement for the earlier CHR reports, as a one-stop repository of information related to Version 4.

While commercial tools for managing a wine cellar are available, there are advantages to the Tool. First, it is free. Second, the cellar information is not stored on-line, which reduces the risk of cybertheft of personal information. Third, its functionality is such that it can make cellar management notably easier and more effective. In the words of one long-time user, “...I love the product and it revolutionizes the way I buy wine as I now purchase for a specific drinking window and in certain brackets.” The primary motivation for developing Version 4 was to assist cellar owners in making decisions about how to manage a purposeful decrease in the size of their cellars.

Having developed the Tool, I wrote the original report and this revised and expanded report to explain how the Tool allows individuals (or restaurants and bars) to manage their wine inventories. Throughout, I use the term “wine cellar” to mean wine inventory, even though wine inventories are not always held in cellars. I developed the Tool because I was surprised at the number of times I had read about people who claimed to “track” their wine cellars in their heads, even those whose cellars run into the thousands of bottles. Granting that these people may have excellent memories, I think it’s easy to mismanage a cellar using one’s head. The key result of mismanagement is failing to drink wines at their peak. Managing a wine inventory can be complex, since wines exhibit different aging profiles that reflect how the wine evolves over time. Some wines peak early and then decline fairly quickly, while others improve slowly

over time, have a long window of peak drinking, and then decline slowly.

This report and Tool complement an earlier CHR report, which Professor Steve Mutkoski and I wrote<sup>1</sup>. That report described how one could take an optimization perspective to managing a wine cellar. The limitation of that report is that implementing the method that we described requires a sophisticated optimization model. By contrast, the Tool presented here is based on a spreadsheet model that can be used to help manage a wine cellar. The spreadsheet-based Tool allows you to input your wine-cellar information without worrying about the underlying spreadsheet rules and arguments. The simplicity of this approach can broaden its applicability, since users need not actually understand how to operate the spreadsheet. All they need do is input the requisite data, as I explain later in this report.

The Tool does not tell you what you must drink (or what to promote). However, once you have input the information regarding your cellar, the Tool can help guide your wine choices, so that you have an appropriate selection of wines in different categories and so that you don’t miss drinking wines at their peak. To be effective, the Tool requires a disciplined approach—recording purchases and consumption and, occasionally, verifying the accuracy of the inventory counts by taking a physical inventory. I believe this disciplined approach is well worth the time, so that no wine you own ages past its peak drinking period. Other benefits are a wide variety of interesting and informative analyses that reflect the wine held in your cellar. From my own use of the Tool over more than 10 years, I can attest to the minimal effort required to keep it updated<sup>2</sup>.

In the remainder of this report I first present the many analyses related to a wine cellar that one can perform with the spreadsheet underlying the Tool. After that, I describe the required data. While the data must come before the analyses, I present them in reverse order, since it is the usefulness and extent of the analyses that will allow you to determine whether using this Tool is worth your while. Following the information on the required data, I present information on the main new feature of Version 4, which can assist cellar owners in making decisions about how to man-

<sup>1</sup> Gary M. Thompson and Stephen A. Mutkoski, “Optimizing a Personal Wine Cellar,” *Cornell Hospitality Reports* Vol. 8, No. 5 (2008), p. 14; Center for Hospitality Research (<https://scholarship.sha.cornell.edu/chrpubs/147/>).

<sup>2</sup> The time required to develop the Tool is a different story.

age a purposeful decrease in the size of their cellars. The report closes with an appendix that identifies summary information about Version 4. In this report I will identify Exhibits that are new or modified in Version 4.

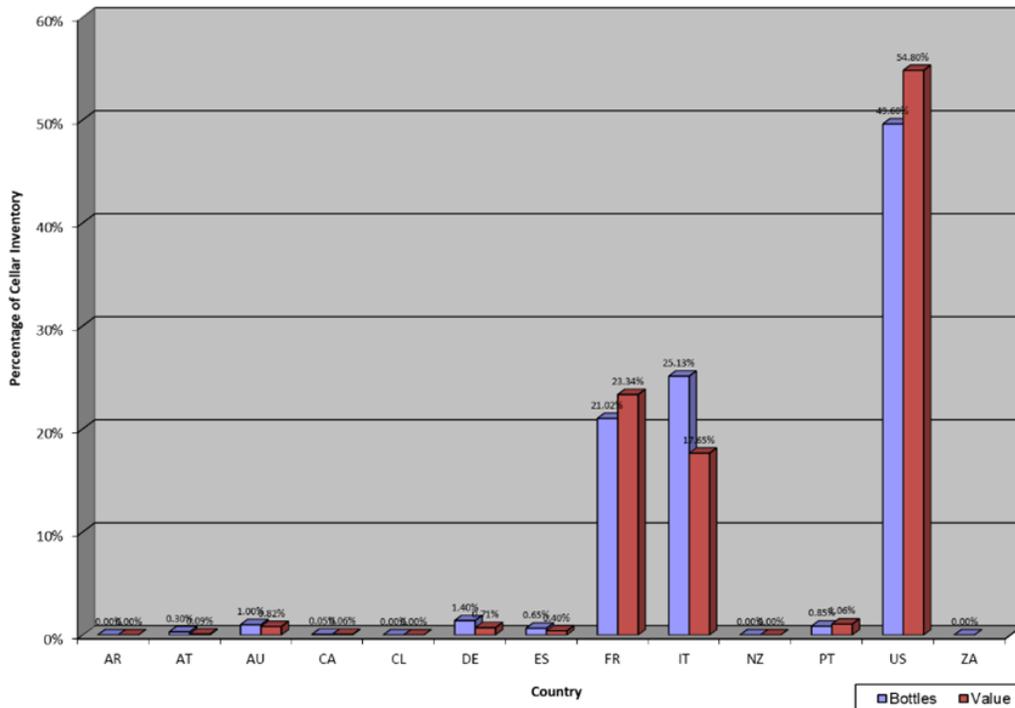
## CELLAR ANALYSES

The cellar analyses can be broken down into those that are interesting or informative and those on which you can base your cellar-management actions. All the analyses presented in this report are based on data from a real wine cellar, but the data have been disguised to some extent to “protect the innocent.” It also bears mentioning that the exhibits were created from one cellar, or a sample of the wine from that cellar, at different points in time. This means that each exhibit shows information for a cellar at a point in time, but the exhibits in total will not tell a consistent story of one cellar at a single point in time.

**Interesting and informative analyses.** The Tool presents its analyses as a series of charts and tables. For example, Exhibit 1 (the Tool’s “Countries” worksheet) illustrates the composition of the cellar, by country of wine origin. In this cellar, wines from three countries dominate. USA wines constitute the most bottles and the most value in the cellar. Italian wines are the second highest number of bottles and the third highest value, while French wines are the third highest number of bottles but the second highest value. The remaining wines are from Australia, Germany, Spain, and Portugal.

### EXHIBIT 1

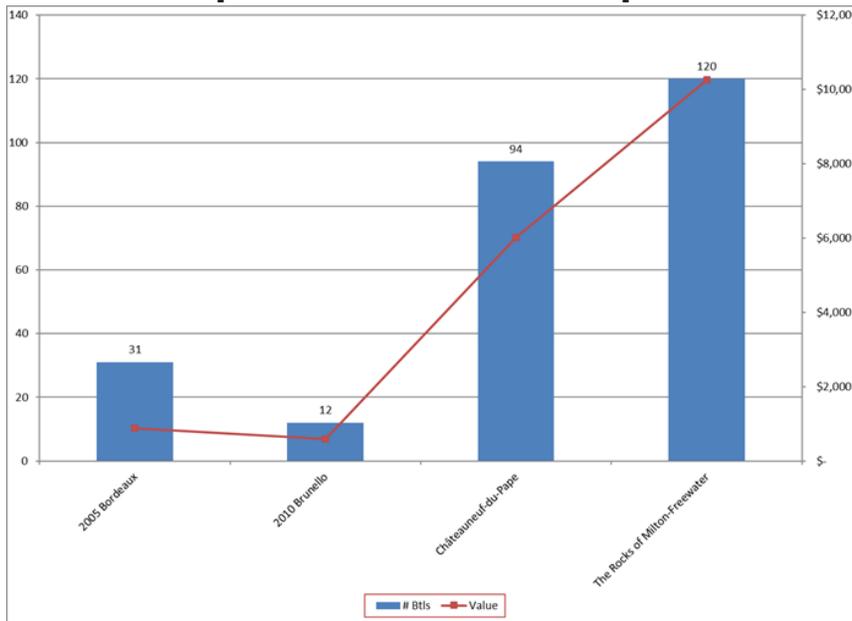
Cellar composition by country of origin [Version 4 includes percentage of Value]



It can be useful to create Special Designations for meaningful groups of wines. These designations might be based on particularly good vintages from certain growing areas, such as 2010 Brunellos (from Italy). Exhibit 2 (the Tool's "Special Designations" worksheet) illustrates the tally of four Special Designations, including the "Rocks of Milton-Freewater" with 10 cases of wine on-hand and "Châteauneuf-du-Pape" with just under eight cases on-hand.

**EXHIBIT 2**

**Special Designation wine on hand [Version 4 includes the Total Value]**



Tracking the cellar composition by vintage can yield information about whether the cellar is being replenished, or whether particularly strong vintages are well represented. Exhibit 3 (the Tool's "Vintages" worksheet) illustrates the cellar's composition, depicting a cellar containing wines from the 1994 vintage onwards, with most of the wine from the 2012 and more recent vintages. A wine vertical is when the cellar contains multiple vintages of the same wine.

**EXHIBIT 3**

**Cellar composition by vintage [Version 4 includes the Total Value]**

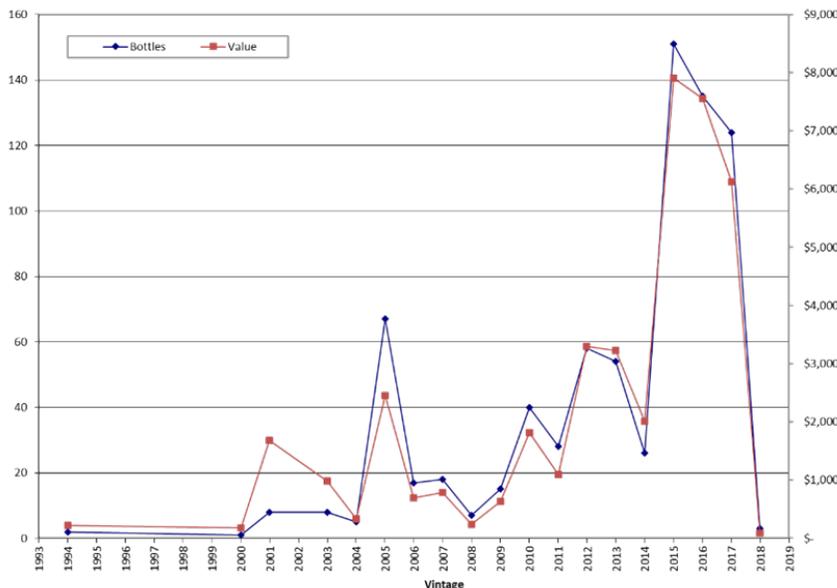
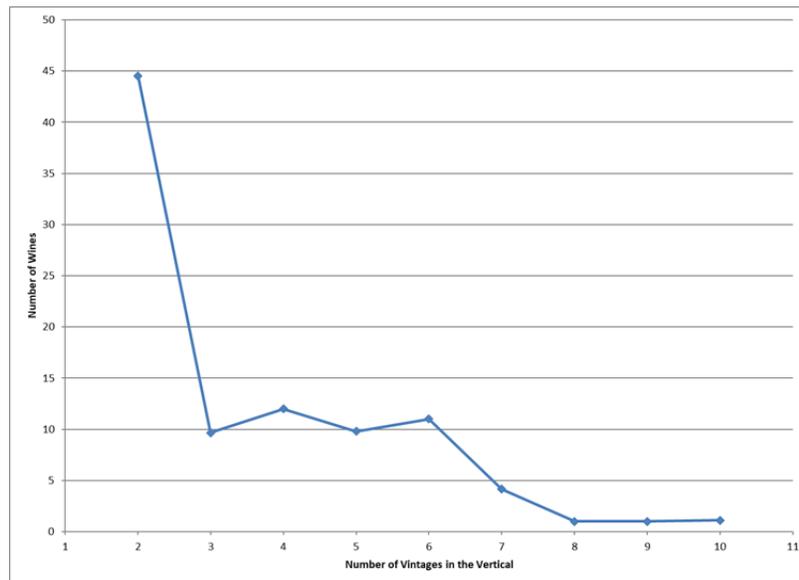


Exhibit 4 (the Tool's "Verticals" worksheet) shows the chart that identifies the number of wines for each vertical. As examples, one wine in the cellar is represented in 10 vintages, while 10 wines in the cellar are represented in five vintages.

**EXHIBIT 4**

**Cellar composition by verticals [new in Version 4]**



A related analysis examines the cellar composition by varietal type, as shown in Exhibit 5 (the Tool's "Varietals" worksheet). One is faced with a decision about the level of detail to use in defining the varietal types. Exhibit 5 uses a moderate level of detail. Thus, reflecting the cellar owners' wine preferences, Shiraz and Syrah (pure and blends) are the dominant wines, representing about 40 percent of the bottles on hand. One could define the varietal types at a broader level, using "Rhône-Style" to encompass the Grenache, Grenache Blend, Shiraz/Syrah (pure and blend wines), which in this cellar constitute about 58 percent of the bottles on hand.

**EXHIBIT 5**

**Cellar composition by varietal**

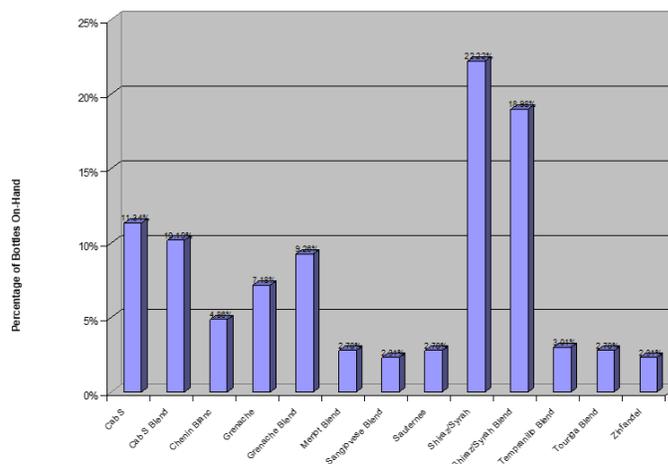
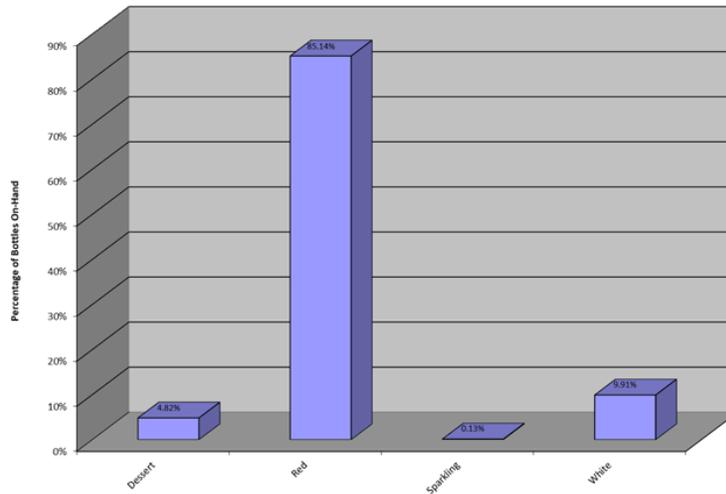


Exhibit 6 (the Tool’s “Wine Colors” worksheet) illustrates another view of the cellar—the distribution of wines by color. As the colors are user-defined, greater or lesser detail is possible. For example, instead of “red”, one could use “light-bodied red”, “medium-bodied red”, and “heavy-bodied red.” In the cellar illustrated in Exhibit 6, just over 85% of the wine is red.

**EXHIBIT 6**

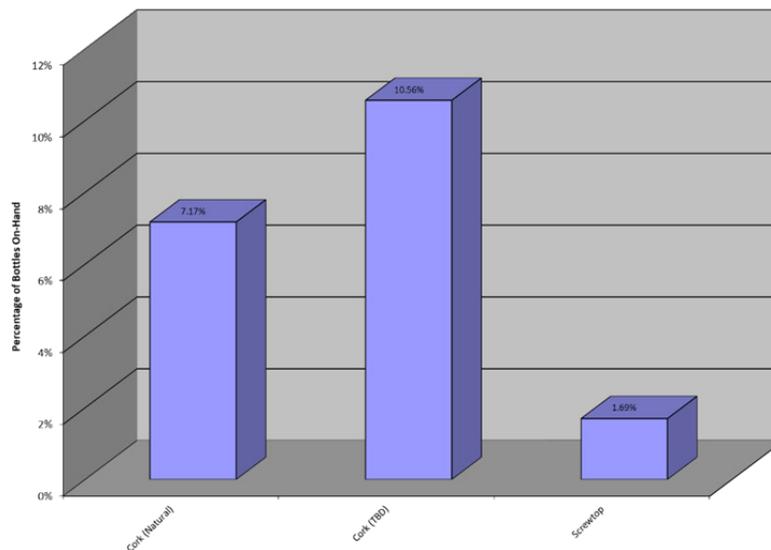
**Cellar composition by color [new in Version 4]**



The distribution of wine in the cellar by the type of closure is shown in Exhibit 7 (the Tool’s “Closures” worksheet). Since the closure is an optional field in the Tool, the percentages may not total 100%, which is the case in Exhibit 7.

**EXHIBIT 7**

**Cellar composition by closure [new in Version 4]**



The wineries comprising the top 20, based on value, are shown in Exhibit 8 (the Tool’s “Wineries (Value)” worksheet). The average rating scores are also shown for these wineries. For this example, the wineries have been given fake names, based on number; with real data the actual winery names would be shown. In the cellar shown, wineries 3 and 66 have the highest values in the cellar, followed by winery 8.

**EXHIBIT 8**

**Cellar composition by winery value [new in Version 4]**

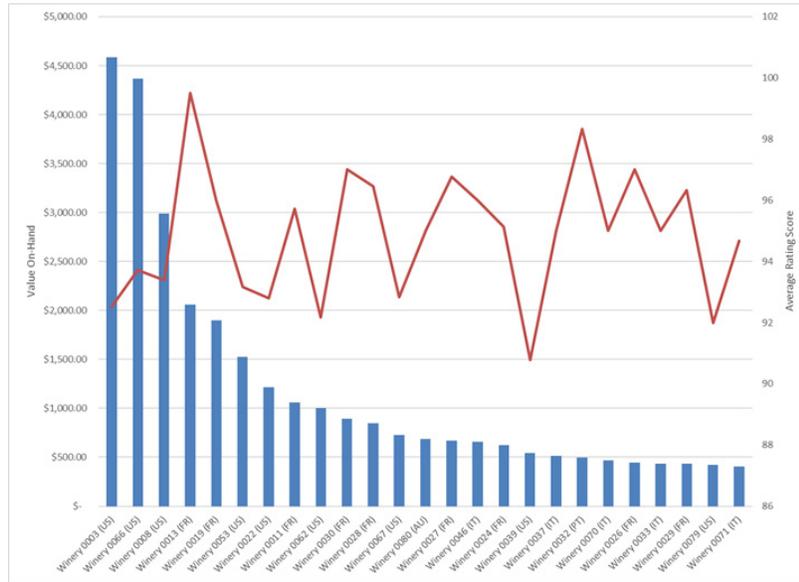


Exhibit 9 (the Tool’s “Wineries (Bottles)” worksheet) is similar to Exhibit 8, except that the wineries are the top 20 based on the number of bottles in the cellar. Interestingly, the top three wineries are the same in both charts. While the value of wine from wineries 3 and 66 were similar, there are many more bottles of wine from winery 3 than there are from winery 66, which obviously means the price per bottle is much higher for winery 66.

**EXHIBIT 9**

**Cellar composition by winery bottles [new in Version 4]**

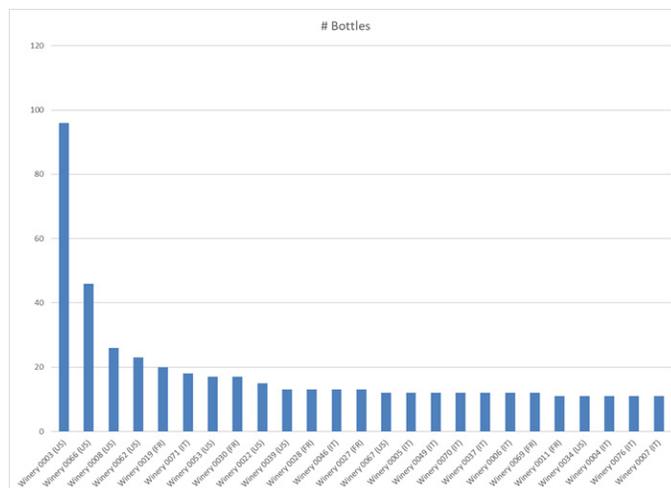
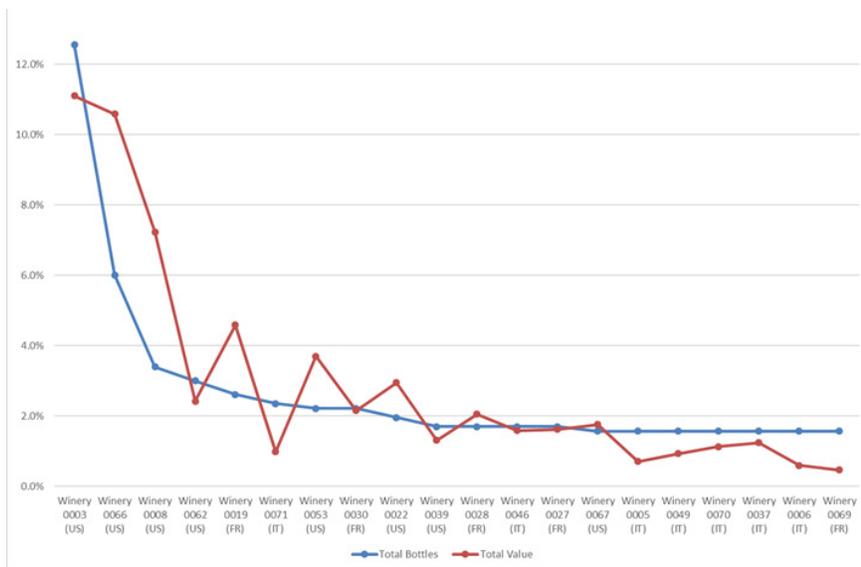


Exhibit 10 (the Tool's "Wineries (Props)" worksheet) shows the proportion of total bottles and total value for each of the top 20 wineries, based on bottle counts. Comparing the red (value) and blue (bottles) lines gives a sense of the relative bottle cost of the wineries. The wineries where the red line is higher than the blue line are those with higher relative bottle costs.

**EXHIBIT 10**

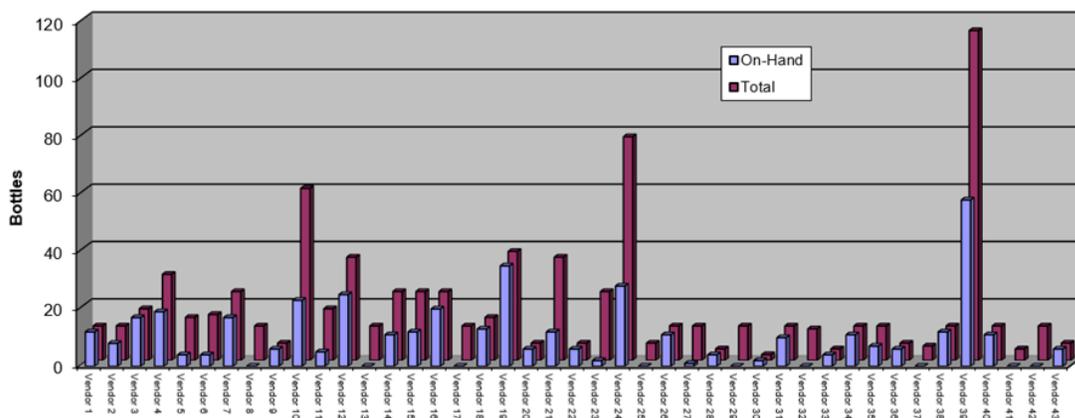
**Cellar composition by winery proportions [new in Version 4]**



Tracking the vendors from which one has purchased wine can also be valuable if you identify a particularly reliable vendor. Exhibit 11 (the Tool's "Vendors" worksheet) illustrates this analysis for the cellar in question (with vendor names anonymized). The exhibit displays both the number of bottles on hand, and the total number of bottles purchased from each vendor. For this cellar, Vendor 31 has been the dominant supplier, followed by Vendor 18.

**EXHIBIT 11**

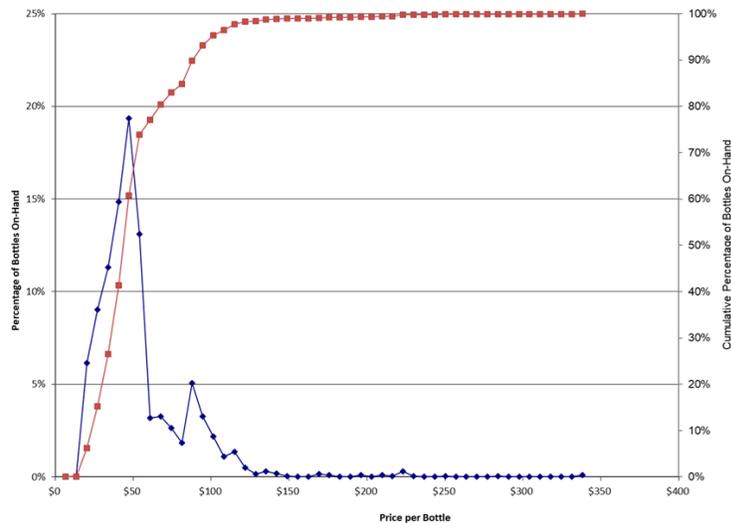
**Wine purchases by vendor**



Exhibits 12 and 13 provide views of the cellar from perspective of the wine price per bottle. Exhibit 12 (the Tool's "Prices (Bottles)" worksheet) illustrates the percentage of total bottles in the cellar, by the price per bottle. For the cellar in question, the highest percentage of total bottles is at \$47 per bottle, while only 10% of the bottles cost more than \$88 per bottle.

**EXHIBIT 12**

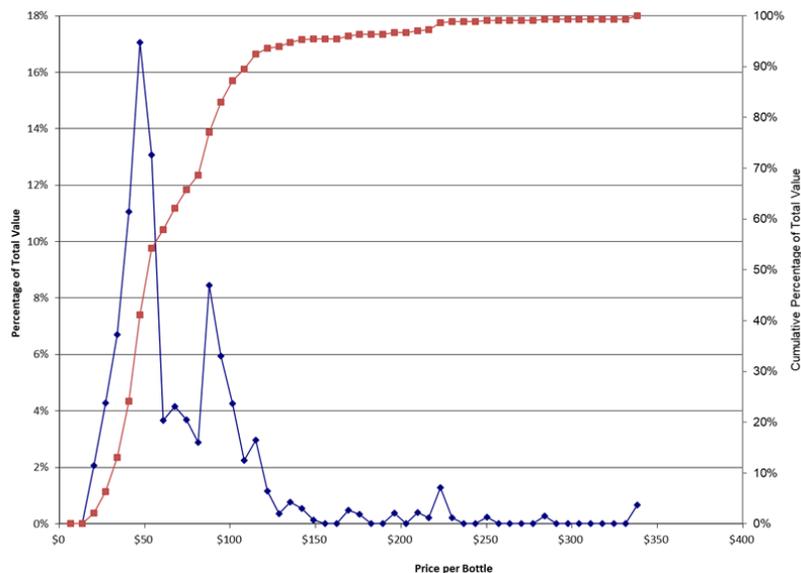
**Cellar bottles by price per bottle [new in Version 4]**



The percentage of total cellar value, by the price per bottle, is illustrated in Exhibit 13 (the Tool's "Prices (Value) worksheet"). For the cellar in question, the highest percentage of total value is also at \$47 per bottle, but only 10% of the total value is from wines that cost more than \$108 per bottle.

**EXHIBIT 13**

**Cellar value by wine price per bottle [new in Version 4]**



Rating wines is a common practice. The three most popular rating sources use 100-point scales: *International Wine Cellar*, *Wine Advocate*, and *Wine Spectator*<sup>3</sup>. The Tool allows you to apply these ratings or develop your own ratings. Regardless of the source of the ratings, it can be useful to examine the cellar composition with respect to the rating scores of the wines, such as is done in Exhibit 14 (the Tool’s “Rating Scores” worksheet). In this cellar, 92-, 95-, 93- and 94-point wines are the most common. The chart is informative, in that it shows the representation in the cellar of higher-rated wines, which are often considered to be more worthy of longer cellaring.

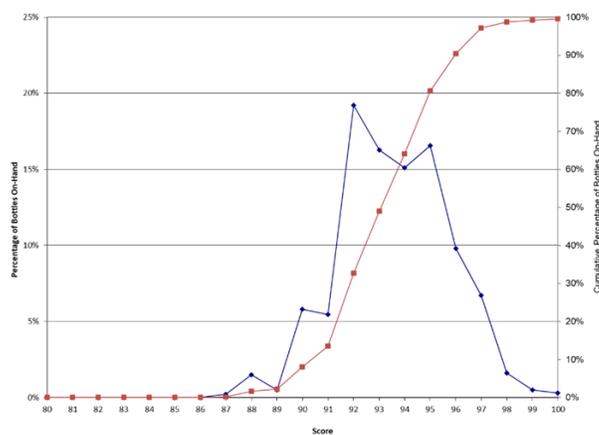
It often seems that there is a weak relationship between the price of wine and its quality<sup>4</sup>. A simple way to examine this relationship is to plot the price of the cellar’s wines as a function of their rating score, an analysis shown in Exhibit 15 (the Tool’s “Score vs Price” worksheet). This chart clearly shows a relationship between price and rating. However, the relationship does not appear to be linear, since price is increasing proportionally faster than rating. These results are consistent with the law of diminishing returns.

<sup>3</sup> See: Gary M. Thompson, Stephen A. Mutkoski, Youngran Bae, Liliana Ielacqua, and Se Bum Oh, “An Analysis of Bordeaux Wine Ratings, 1970-2005: Implications for the Existing Classification of the Médoc and Graves,” *Cornell Hospitality Reports*, Vol. 8, No. 11 (2008), Cornell Center for Hospitality Research (<https://scholarship.sha.cornell.edu/chrpubs/145/>)

<sup>4</sup> Ibid.

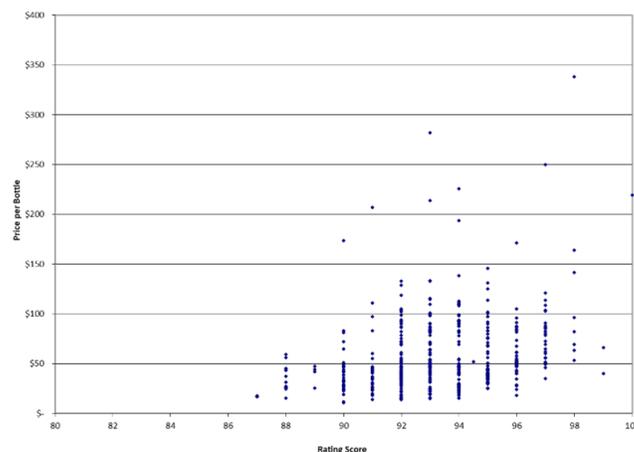
**EXHIBIT 14**

**Cellar composition by rating score [Version 4 includes percentage of total bottles on-hand]**



**EXHIBIT 15**

**Wine price as a function of rating score**



The wine purchases can be examined with respect to price, as illustrated in Exhibit 16 (the Tool’s “Wines by Price” worksheet). Here, the number of different wines in the cellar is plotted for different ranges of price per bottle. For the cellar in question, bottle prices in the \$15 to \$20 range are the most common, followed by wines in the \$10 to \$15 price range. It is important to note that the price-range categories are not equal in this exhibit: the ranges expand with more expensive bottle prices. One’s wine budget will largely determine whether the purchases are skewed to the left, as they are in this exhibit, where budget-priced wines dominate, or skewed to right.

**EXHIBIT 16**

**Number of different wines in the cellar, by price per bottle**

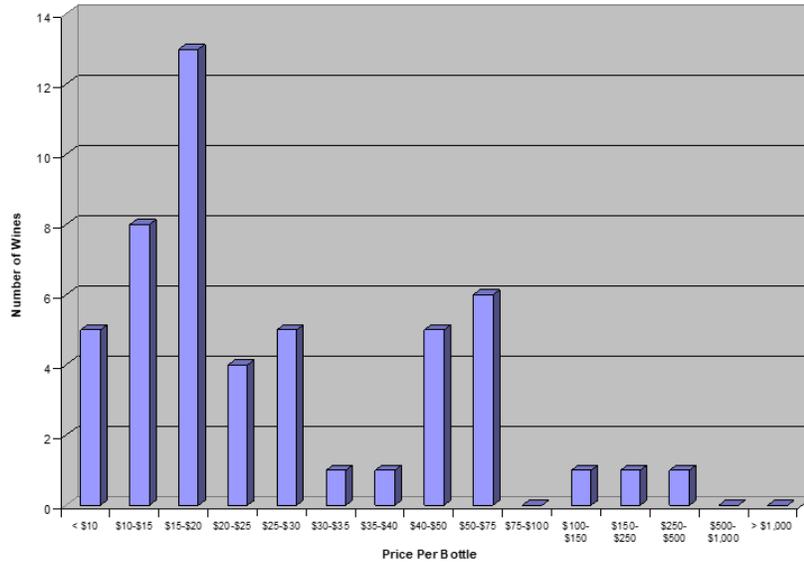
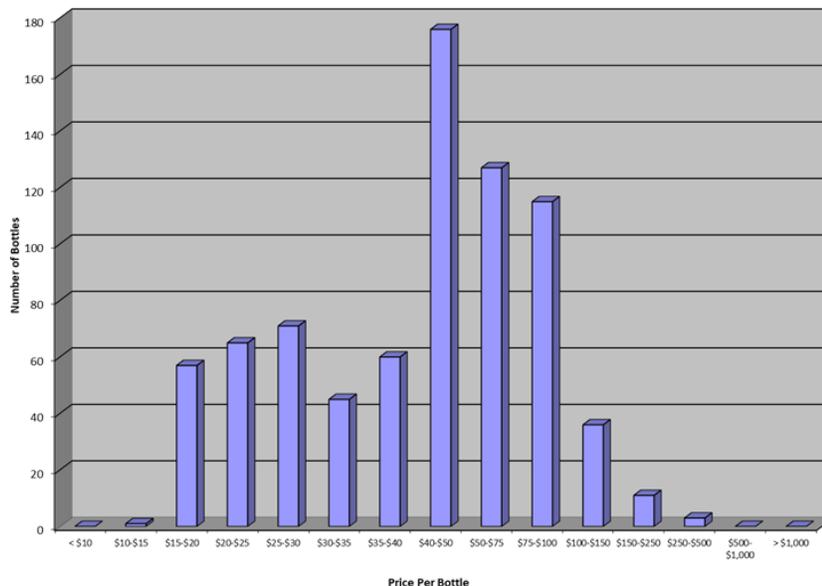


Exhibit 17 (the Tool’s “Bottle by Price” worksheet) plots the number of bottles with respect to price. For this cellar, bottle prices of \$40 to \$100 are the most common and there are relatively few bottles of \$20 and under.

**EXHIBIT 17**

**Number of bottles in the cellar, by price per bottle [new in Version 4]**



When purchasing wine, there is always the issue of the number of bottles of a wine to purchase. As noted in my earlier CHR report with Professor Mutkoski:

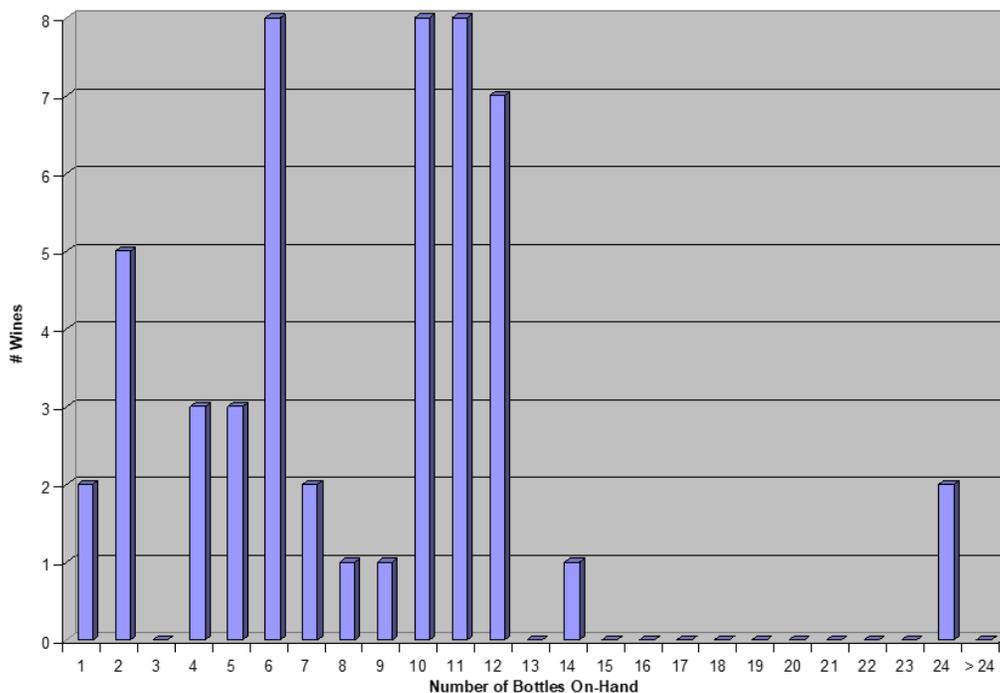
Having multiple bottles of the same wine allows one to taste the wine over time, seeing how it develops and ensuring that at least some bottles are consumed at their peak. Another reason to buy more than a single bottle of each wine, particularly for good wines, is that a person may wait too long for an occasion that's "special enough" to merit opening that one outstanding bottle. Then when it is opened, it may be past its peak.<sup>5</sup>

Exhibit 18 (the Tool's "Bottles On-Hand" worksheet) shows the number of different wines in the cellar, by the number of bottles on hand. In this cellar, the most common numbers of bottles on hand are 6, 10 and 11, while two of the wines have 24 bottles on hand.

<sup>5</sup> Thompson and Mutkoski, p. 10.

**EXHIBIT 18**

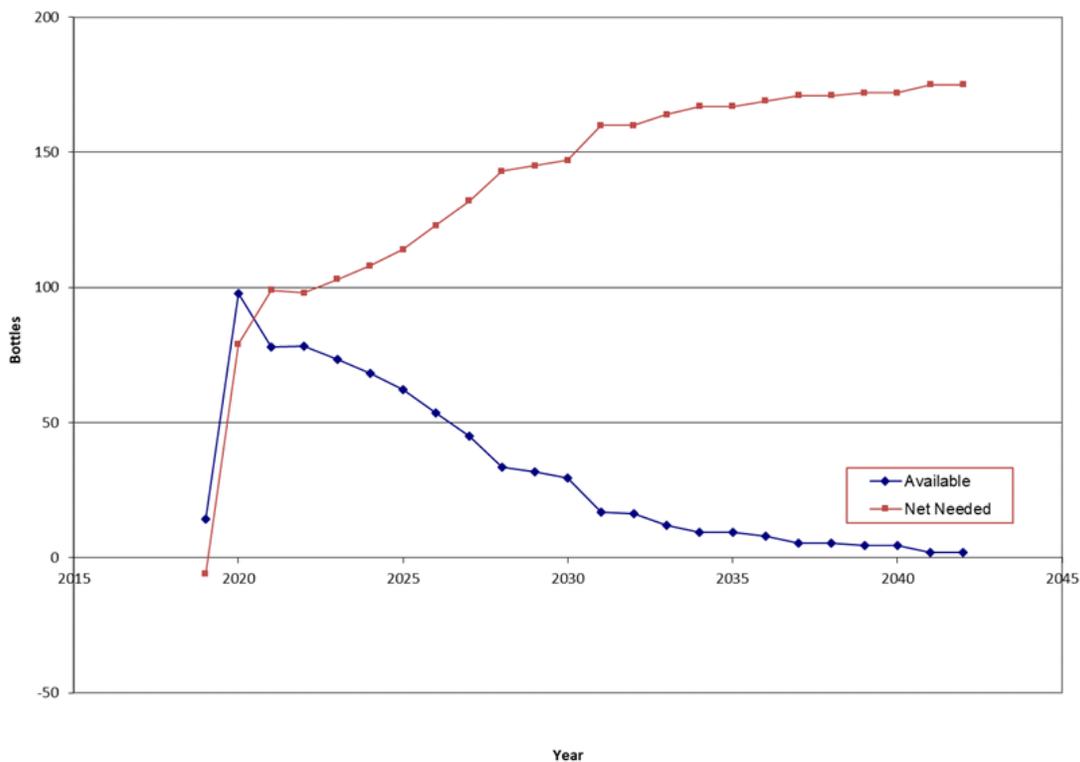
**Number of different wines in the cellar, by number of bottles on hand**



As I described in the introduction, wines vary in how they age over time. Each wine can be thought of as having a peak drinking window—the period during which the wine is best consumed. That window will vary based on, among other things, the grape varietals in the wine, the growing conditions of the vintage, and how the wine was made. Experienced wine drinkers can estimate the peak drinking window. Also, it is common for the rating services mentioned earlier to provide information like “drink now” or “best from 2022 to 2035.” By assuming that each wine will be consumed at a more or less constant rate over its peak drinking window, you can get an idea of how many bottles will be available for consumption each year by summing the predicted consumption across all wines, as illustrated in Exhibit 19 (the Tool’s “Btls Avl by Yr” worksheet). For the cellar in question, about 15 bottles would be available in 2019 (the chart was created in late 2019), rising to about 100 in 2020, and then declining until fewer than ten bottles would be available per year beginning in 2033. Obviously, the shape of this curve will vary with the time of the year (the current year will look different early in the calendar year compared to late in the calendar year) and with the nature of the wines in the cellar (long-lived wines will yield a chart that looks different than that from short-lived wines). Moreover, this chart does not say which wines will be consumed, since that is a personal choice.

**EXHIBIT 19**

**Estimated number of bottles available for consumption, by year [Version 4 includes the Net Needed]**



The “Net Needed” line shown in Exhibit 19 is the number of additional bottles that would be needed in the year to meet the predicted wine consumption. The negative Net Needed for 2019 indicates that, based on the date the chart was created (near the end of 2019), there was a small surplus of wine available within the peak drinking window. If the number of bottles available for consumption in a year notably exceeds the number of bottles that you typically consume in a year, chances are that many wines are nearing the end of their peak drinking periods. In that case, it may either be time to have some large parties or to sell some of the wine on the auction market.

The bottles available by year by wine color, is shown on the Tool's "Btls Avl by Yr by Color" worksheet. Exhibit 20 shows a screenshot of this chart, in which the wine "colors" are user-defined. Based on the assumption that wines will be consumed evenly throughout their peak drinking window, this chart can help guide purchase decisions, with respect to the timing and length of the drink windows for wines being considered for purchase.

**EXHIBIT 20**

**Estimated number of bottles available for consumption, by color, by year**

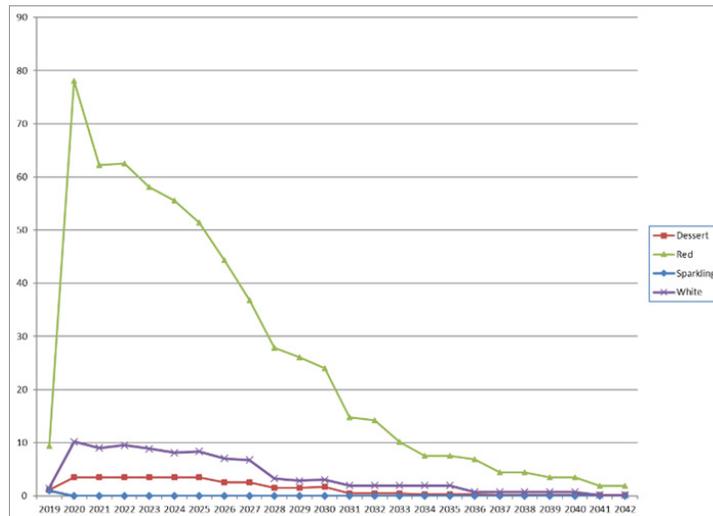
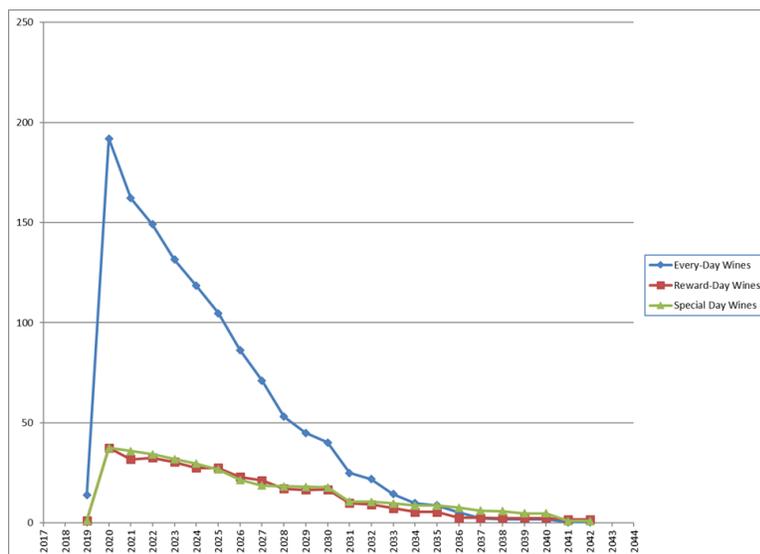


Exhibit 21 (the Tool's "Btls Avl by Yr by Cat" worksheet) shows a chart similar to that shown in Exhibit 20, except that the bottles available by year are for the categories of Every-Day, Reward-Day, and Special Occasion wines. Later in this report I discuss how the three categories are defined. Because the Special Occasion wines are often those with longer aging window, there is a slower decline in the number of bottles available per year for those wines, compared to the decline for wines in the other two categories.

**EXHIBIT 21**

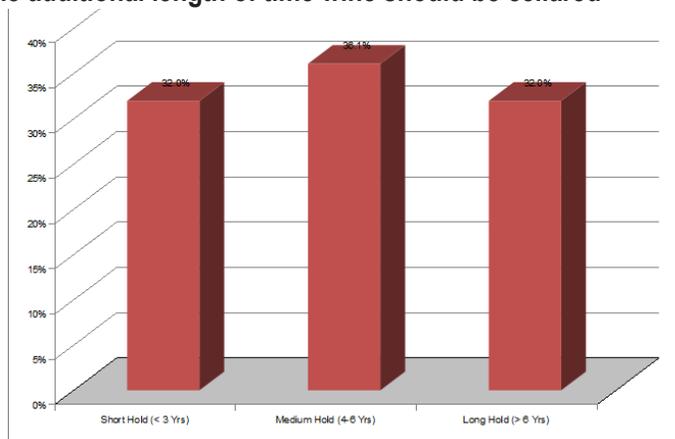
**Estimated number of bottles available for consumption, by category, by year [new in Version 4]**



Another way to look at a cellar is to assess its peak drinking windows. Based on the end of the peak drinking period, each wine can be categorized as short-lived, medium-lived, or long-lived. Short-lived wines can be defined as having peak drinking periods that expire within three years of the analysis date. By contrast, the peak drinking windows of long-lived wines expire more than six years in the future. Medium-lived wines fall in the middle of these time frames. The percentages of wine in the cellar that fall in each of these categories can then be examined, as shown in Exhibit 22 (the Tool’s “Inv Composition” worksheet). The cellar in question is balanced between short-, medium-, and long-lived wines, since each category represents about one third of the bottles in the cellar.

**EXHIBIT 22**

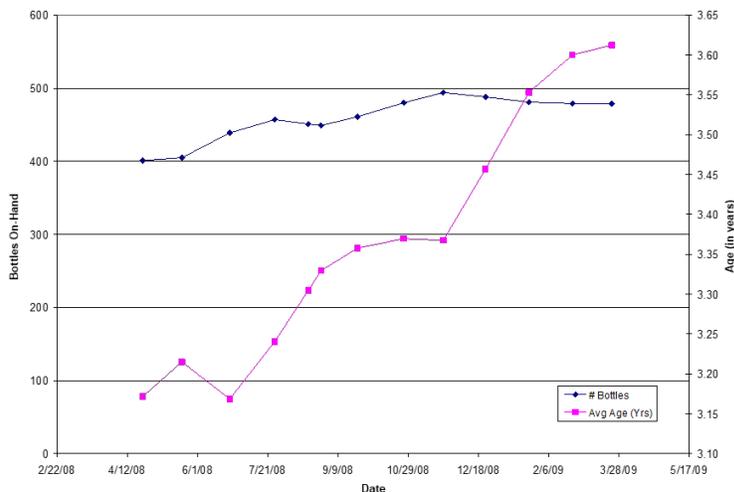
**Cellar composition by the additional length of time wine should be cellared**



All the analyses that I have discussed so far are static. They describe the state of the cellar at any time, but they do not track how the cellar’s status has changed over time. The Tool has six time-based tracking features, which it updates automatically every month, and which are illustrated in Exhibits 23 through 28. Exhibit 23 (the Tool’s “Cellar History, Pt 1” worksheet) presents an example of two metrics tracked over time—namely, the number of bottles in the cellar, and the average age of the wines in the cellar. This exhibit shows that the sample cellar was increasing in size for the first nine months that it was tracked, but that the size has stabilized over the last five months. Over the entire period, the average age of the wine in the cellar has increased. Stability in the number of bottles in the cellar and the age of the wines in it are indicative of a stable cellar.

**EXHIBIT 23**

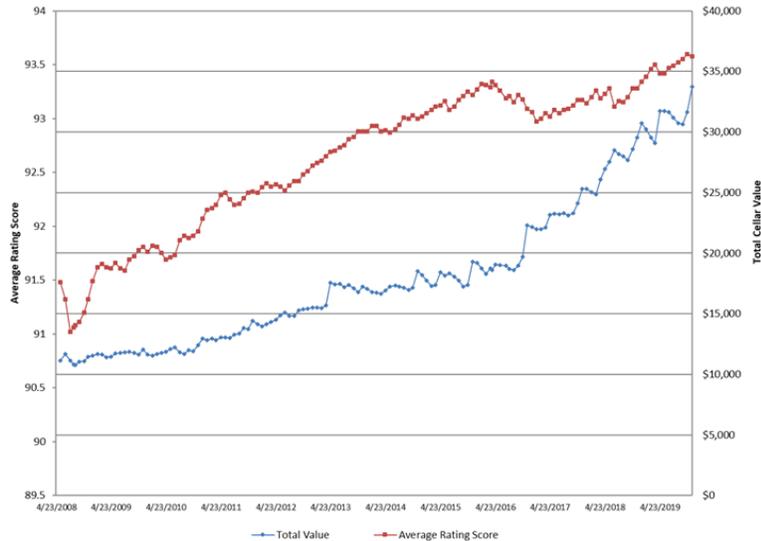
**Cellar size and average bottle age over time**



The second historical chart is illustrated in Exhibit 24 (the Tool’s “Cellar History, Pt 2” worksheet). It shows the evolution in the average rating score of wines in the cellar and total value of the cellar. For the cellar in question, both the average score and total value have been increasing, which is the result of the decision to consume the lower-cost and lower-rated wines sooner than those with higher costs and ratings.

**EXHIBIT 24**

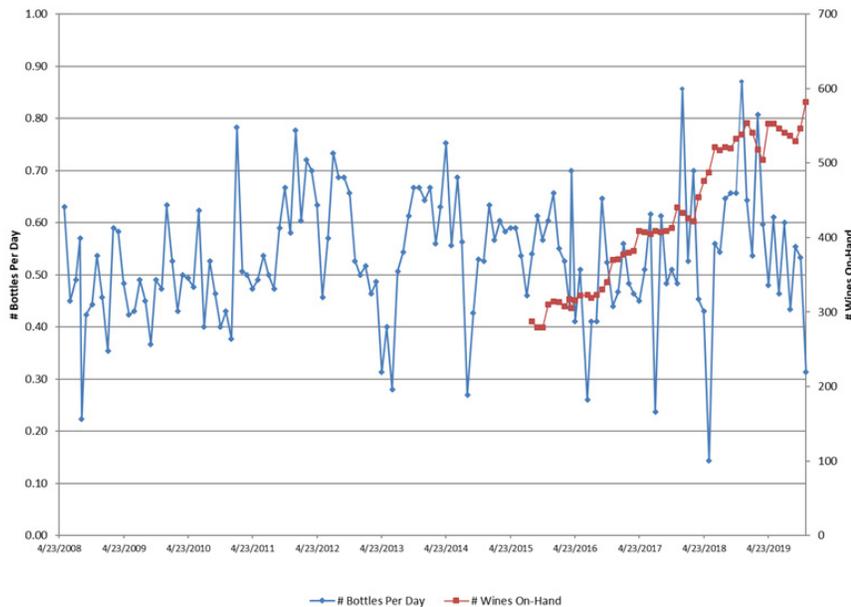
**Average rating score and total cellar value over time**



The “Cellar History, Pt 3” chart, the Tool’s third time-based chart, which is illustrated in Exhibit 25 (the Tool’s “Cellar History, Pt 3” worksheet), now also tracks the number of different wines in the cellar over time. This can be particularly useful for commercial cellars. For the cellar shown, the number of different wines has increased from under 300 in 2015 to close to 600 in 2019 (when the chart was created).

**EXHIBIT 25**

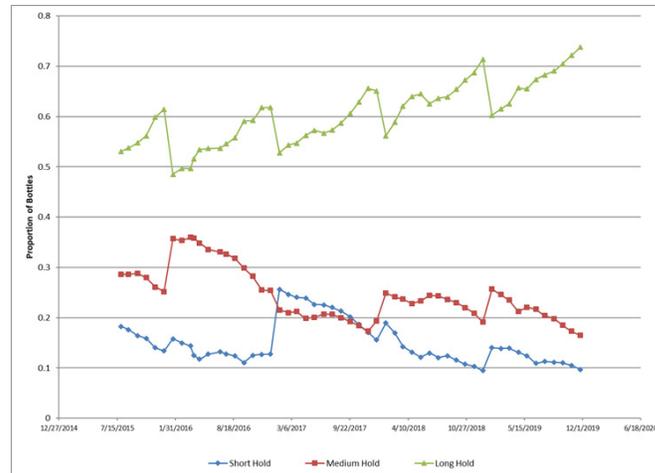
**Consumption in bottles per day and number of different wines on-hand over time [Version 4 added the number of different wines]**



The chart in Exhibit 26 (the Tool’s “Cellar History, Inv Comp” worksheet), which tracks the proportion of wine in the cellar falling in each of the short-hold, medium-hold, and long-hold categories, is the Tool’s fourth time-based chart. This chart can yield insights into how the cellar composition has evolved over time. For the cellar in question, the proportion of long-hold wines has increased, while the proportions have fallen for medium-hold and short-hold wines. The “step” shape of the long-hold wines is a result of the Tool updating the classification of the wines at the beginning of a year: some long-hold wines will move into the medium-hold category, while some medium-hold wines will move to the short-hold category.

**EXHIBIT 26**

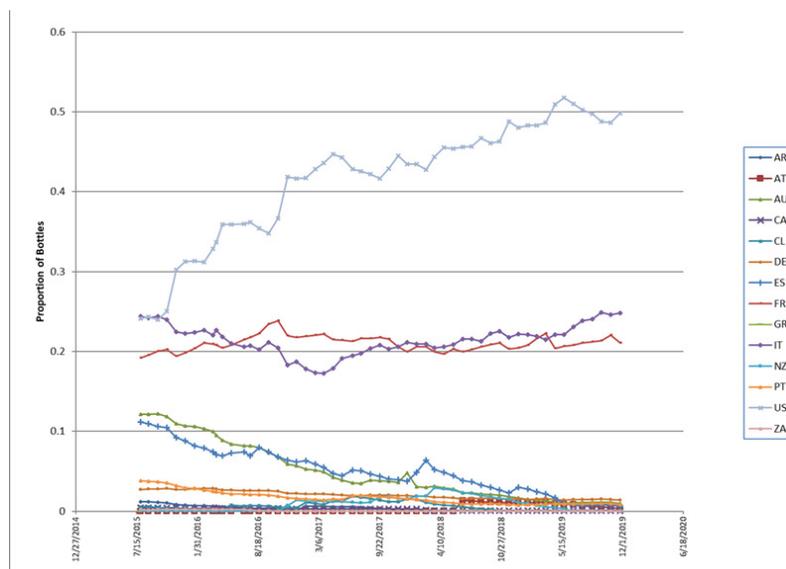
**Cellar history by wine hold-times**



The fifth time-based chart is the cellar composition by country of origin over time, which is found in the Tool’s “Cellar History, Countries” worksheet. A screenshot of the chart is shown in Exhibit 27 (the Tool’s “Cellar History, Countries” worksheet). Like the inventory composition chart, the country composition of the cellar will evolve over time, based on purchase and consumption decisions. For the cellar illustrated, the proportion of USA wines approximately doubled from 2015 to 2019 (when the chart was created).

**EXHIBIT 27**

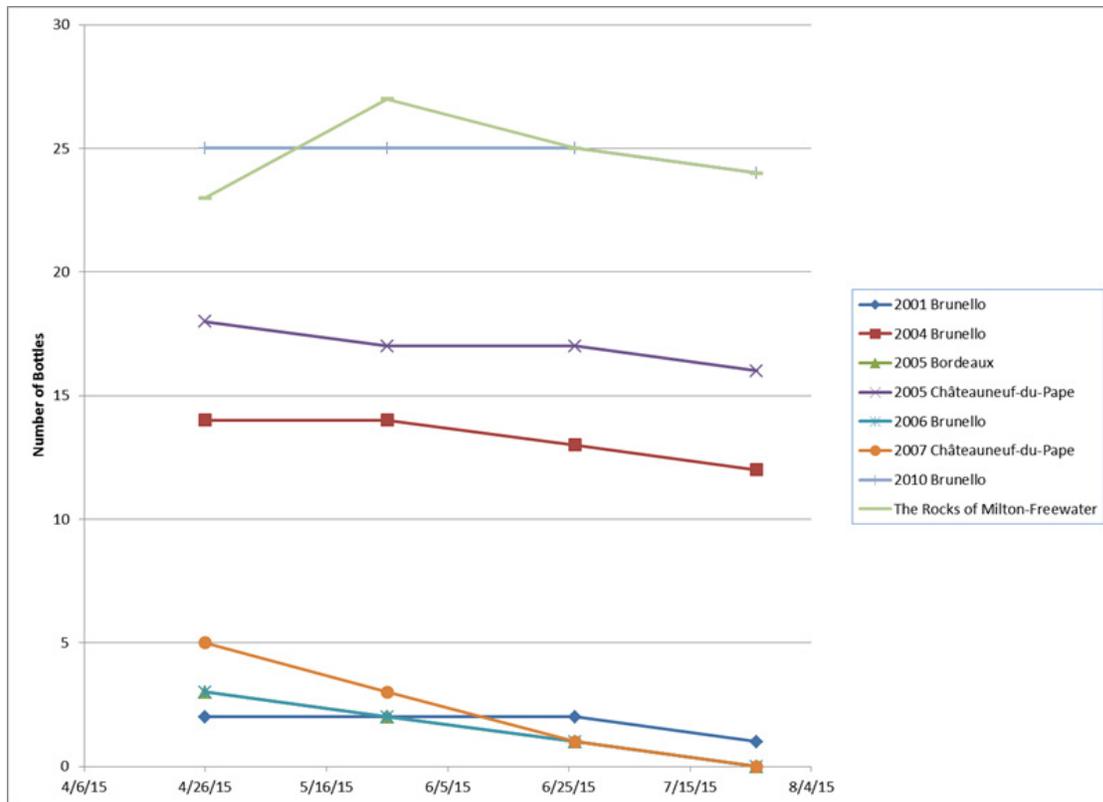
**Cellar history by country of origin**



The cellar composition by Special Designation over time is the sixth time-based chart, an example of which is shown in Exhibit 28 (the Tool's "Cellar History, Spc Dsgns" worksheet). This chart offers a good way to see changes over time in the quantities of the wines falling in the user-defined Special Designation categories. For the cellar illustrated, there was not a lot of change over the four-month period shown.

**EXHIBIT 28**

**Cellar history by special designation**



In addition to the analyses that can be presented in chart format, the Tool presents certain numerical statistics, as shown in Exhibit 29 (the Tool’s “Summary Stats” worksheet). The average price per bottle and average rating score are calculated both for total purchases and for the wines on hand. Comparing these numbers for the cellar in question shows that the on-hand wines are both more expensive and higher-rated than the total purchases, which indicates that the less-expensive and lower-rated wines are being consumed at a higher rate than the more-expensive and high-rated wines. That outcome is consistent with the goal of keeping the better wines in the cellar a longer time (and for saving certain wines for special occasions, as I discuss below). Many of the analyses shown in Exhibit 29 are performed on the actual number of bottles and also for the “standard bottle equivalents,” which adjusts the calculations based on the sizes of the bottles in the cellar, and converts the values to the equivalents of standard (i.e., 0.75 liter) bottles.

**EXHIBIT 29**

**Summary statistics for the cellar**

Purchased Wines		Rating Score	# Bottles	%
<b>Actual Bottles ...</b>		>= 95	297	38.72%
Average \$/Bottle	\$ 31.52	>= 94	400	52.15%
Average Rating Score per Bottle	92.58	>= 93	525	68.45%
# Bottles	3,044	>= 92	676	88.14%
<b>Standard Bottle Equivalents ...</b>		<= 89	13	1.69%
Average \$/Bottle	\$ 31.80	<= 88	13	1.69%
Average Rating Score per Bottle	93.47	< 88	3	0.39%
# Bottles	3,050			
<b>On-Hand Wines</b>				
<b>Actual Bottles ...</b>				
# Bottles	767			
Average \$	\$ 53.88			
Average Rating Score	93.72			
Average Age (Days)	2,354			
Average Age (Years)	6.45			
Zero-Inventory Date	4/17/24			
Bottles Consumed per Week	3.39			
3-Mnth Avg Btls per Week	3.27			
Total \$	\$ 41,322			
<b>Standard Bottle Equivalents ...</b>				
# Bottles	774			
Average \$	\$ 54.69			
Average Rating Score	93.68			

The Zero-Inventory Date shown in Exhibit 29 is the date at which the cellar would be empty if no additional bottles were purchased and consumption continued at its current rate. The summary statistics can also track the percentage of wines in the cellar that have rating scores higher or lower than specified values. For the cellar in question, 38.7 percent of the bottles have rating scores of 95 or higher, for instance, while 1.7 percent of the wines have rating scores of 89 or lower.

**Actionable Analyses.** I describe the above analyses as interesting and informative, because they don't guide you in deciding when and which wine to drink. The analyses I present next can provide information helpful in guiding consumption and promotion choices or decisions to reorder certain wines. A larger number of these analyses are available via the "View Wine Analyses" button on the "Switchboard" worksheet, which opens the "Wine Analyses" form. The analyses available in this form can be filtered based on the wine color, varietal, and country of origin.

Perhaps the most important actionable analysis is a watch list of wines, which is based on each wine's peak drinking window. For each wine, the Tool divides the number of days that remain in the peak drinking window by the number of bottles on hand, and presents the wines in order, starting with those having the least time left per bottle, meaning those that are closing in on the end of their peak drinking window. As shown in Exhibit 30, the wine highest on the watch list for this cellar has a consumption metric of -535 days. Negative values result when a wine is held past its specified peak drinking window, which people sometimes choose to do to see how the wine holds up to extended aging. The third wine on the list has a consumption metric of 98 days, which indicates that a bottle of this wine should be consumed every 98 days, so that it is consumed completely within the peak drinking window. Since drinking about a bottle every three per months is not a challenge, it is doubtful that there would be a problem consuming this wine within its peak drinking window. However, if many wines in the cellar were nearing the end of their peak drinking window, the watch list would have more wines with small numbers of days between consumption. At that point, the wines would be candidates either for being consumed at a party you host or for being sold on the auction market.

### EXHIBIT 30

### A Watch List of wines to ensure consumption during their peak drinking windows

**Wine Analyses**

Wines Meeting the Criteria

[-535.0]	[01/24]	Chateau Tanunda   2008   Syrah   Grand Barossa Shiraz   0.75 L
[-170.0]	[01/12]	Rex Hill   2009   Pinot Noir   Willamette Valley Pinot Noir   0.75 L
[98.0]	[02/03]	Carlisle   2012   Zinfandel   Zinfandel, Napa Valley, Hayne Vineyard   0.75 L
[98.0]	[02/02]	Carlisle   2012   Zinfandel   Zinfandel, Russian River Valley, Limerick Lane   0.75 L
[98.0]	[02/02]	Carlisle   2013   Zinfandel   Zinfandel, Russian River Valley, Limerick Lane   0.75 L
[98.0]	[02/04]	Keep Wines   2016   Syrah   Syrah Napa Valley   0.75 L
[98.0]	[02/12]	Poggio il Castellare   2004   Brunello   Brunello di Montalcino   0.75 L
[183.8]	[11/12]	Proper Wines   2017   Syrah   Proper Syrah   0.75 L
[184.4]	[07/15]	Bedrock Wine Co   2018   Syrah   Syrah California   0.75 L
[185.2]	[05/06]	Carlisle   2013   Zinfandel   Zinfandel, Russian River Valley, Papera Ranch   0.75 L
[187.0]	[03/08]	Carlisle   2013   Syrah   Syrah, Sonoma County   0.75 L
[187.0]	[03/04]	Carlisle   2013   Zinfandel   Zinfandel, Russian River Valley, Montafi Vineyard   0.75 L
[187.0]	[03/04]	Turley   2019   Cinsault   Bechthold Vineyard Cinsault   0.75 L
[192.4]	[20/24]	Bodegas y viñedos Valdeiz   2016   Tempranillo Blend   Ribera del Duero   0.75 L
[196.0]	[01/02]	Carlisle   2011   Syrah   Syrah, Sonoma Mountain, Steiner Vineyard   0.75 L
[196.0]	[01/02]	Carlisle   2011   Zinfandel   Zinfandel, Russian River Valley, Carlisle Vineyard   0.75 L
[196.0]	[01/04]	Carlisle   2011   Zinfandel   Zinfandel, Sonoma County   0.75 L
[196.0]	[01/18]	Fox Gordon   2004   Shiraz   Eight Uncles Barossa Valley   0.75 L
[196.0]	[01/48]	Pillar Box   2008   Shiraz   Reserve Shiraz   0.75 L
[196.0]	[01/08]	Yalumba   2005   Shiraz Viognier   Hand Picked Barossa Valley   0.75 L
[206.0]	[24/24]	Castellare di Castellina   2017   Sangiovese & Canaiolo   Chianti Classico   0.75 L
[207.1]	[08/12]	Corte Pavone   2006   Brunello   Brunello Di Montalcino   0.75 L
[226.4]	[17/24]	Chateau de Saint Cosme   2010   Grenache, Mouvedre, Cinsalt, Syrah   Gigondas   0.75 L
[232.2]	[15/24]	Casaloste   2015   Sangiovese   Chianti Classico   0.75 L
[236.7]	[07/07]	Keep Wines   2019   Counoise   Counoise Sierra Foothills, David Girard Vineyard   0.75 L
[275.2]	[10/12]	Domaine Saint Prefert   2005   Chateaufneuf Du Pape   Reserve Auguste Favier   0.75 L
[275.2]	[10/12]	Punset   2007   Nebbiolo   Barbaresco   0.75 L
[275.2]	[10/12]	Two Hands   2012   Shiraz   Bella's Garden Barossa Valley   0.75 L
[276.2]	[06/12]	Bedrock Wine Co   2014   Field blend (25 varietals)   Bedrock Heritage   0.75 L
[276.2]	[06/06]	Carlisle   2015   Zinfandel   Zinfandel, Russian River Valley, Carlisle Vineyard   0.75 L
[276.2]	[06/06]	Carlisle   2015   Zinfandel   Zinfandel, Russian River Valley, Papera Ranch   0.75 L
[280.5]	[02/02]	Carlisle   2012   Zinfandel   Zinfandel Dry Creek Valley   0.75 L
[280.5]	[02/04]	Carlisle   2012   Zinfandel   Zinfandel, Russian River Valley, Carlisle Vineyard   0.75 L
[280.5]	[02/05]	Carlisle   2013   Zinfandel   Zinfandel, Sonoma County   0.75 L
[288.9]	[07/12]	Albino Rocca   2007   Nebbiolo   Barbaresco Duemilasette   0.75 L
[298.4]	[08/12]	La Poderina   2006   Brunello   Brunello di Montalcino   0.75 L
[305.8]	[09/12]	Clos du Mont-Olivet   2005   Chateaufneuf Du Pape   Reserve Auguste Favier   0.75 L
[308.7]	[03/04]	Carlisle   2012   Zinfandel   Zinfandel, Russian River Valley, Papera Ranch   0.75 L
[308.7]	[03/03]	Keep Wines   2017   Ciliegolo   Ciliegolo, Ripken Vineyard   0.75 L

Notes  
The 'Watch List' option lists wines in declining order of days-between-bottle consumption, to ensure that the wine will be consumed within its peak drinking window. For example, a number like '[7.0]' would indicate that you would need to consume a bottle of this wine every week to ensure that you consume the wine by the end of the 'Drink-Through' period.  
The numbers in the second set of brackets are the number of bottles remaining of the number of bottles purchased.

Print Bottle Count by Winery & Vintage (sorted by winery) | Print Bottle Count by Winery & Vintage (sorted by bottles) | Close

**Analysis Options**

- 'Watch List' (drink-now wines)
- 'Consume-a-Bottle-By' Wines
- High Consumption Rate
- Predicted Expiry Date
- Corked Wines

Analyze Corked Wines by...

- Closure
- Shipping Method
- Varietal
- Vintage
- Vendor
- Winery

Every-Day Wines: Max Score: 99, # Btls: 1129, Est Expiry Dt: [ ]

Reward-Day Wines: [ 929 ] Btls/Wk: 2

Special Occ. Wines: Min Score: 99, [ 928 ] Btls/Yr: 10

Total Bottles: 1781

Categorize Wines Based on:  Rating Score,  Purchase Price

Sort By:  Drink-Now Score,  Rating Score,  Purchase Price,  Winery

Print List < | Pick a Wine for Me!

Filter By...  
Color: Red  
Varietal: All Varietals  
Country: All Countries

A new feature in Version 4 of the Tool is the ability to define a Consume-a-Bottle-By date for each wine. This can be particularly useful with aging-worthy wines. After sampling a bottle, one can set a new Consume-a-Bottle-By date. As shown in Exhibit 31, the Tool will list the wines for which Consume-a-Bottle-By dates have been defined, in chronological order.

**EXHIBIT 31**

**Consume-a-Bottle-By Wines [new in Version 4]**

The screenshot shows the 'Wine Analyses' tool interface. At the top, it says 'Wine Analyses' and 'Wines Meeting the Criteria'. Below this is a table with three rows of wine data:

Date	Wine Name	Vintage	Volume	Consume-a-Bottle-By Date
8/1/2020	Torrin Vineyard	2016	1 Syrah   Akasha Syrah   0.75 L	02/02
9/1/2020	Thomas	2015	Pinot Noir   Pinot Noir, Dundee Hills   0.75 L	04/04
10/31/2020	Elvio Cogno	2007	Barolo   Barolo Cascina Nuova   0.75 L	11/12

Below the table is a 'Notes' section with the following text: 'Consume-A-Bottle-By Wines' are those for which you have specified dates by which a bottle should be consumed. Specifying such dates—and drinking a bottle near the specified date—can help you see how a wine is developing over time, so that the majority of its bottles are consumed at the wine's peak.

At the bottom of the interface are two buttons: 'Print Bottle Count by Winery & Vintage (sorted by winery)' and 'Print Bottle Count by Winery & Vintage (sorted by bottles)'. A 'Close' button is also present.

The right-hand side of the interface contains 'Analysis Options' with several radio button selections:

- 'Watch List' (drink-now wines)
- 'Consume-a-Bottle-By' Wines (Consider:  All Wines,  On-Hand Only)
- High Consumption Rate
- Predicted Expiry Date
- Corked Wines (Analyze Corked Wines by...:  Closure,  Vintage,  Shipping Method,  Vendor,  Varietal,  Winery)

Below these are input fields for 'Every-Day Wines' (Max Score: 94, # Btls: 1124, Est Expiry Dt: [blank]), 'Reward-Day Wines' (Btls/Wk: 2), and 'Special Occ. Wines' (Min Score: 95, # Btls: 323, Btls/Yr: 10, Total Bottles: 1781). There are also options to 'Categorize Wines Based on' (Rating Score, Purchase Price) and 'Sort By' (Drink-Now Score, Rating Score, Purchase Price, Winery). At the bottom right are buttons for 'Print List <', 'Pick a Wine for Me!', and 'Filter By...' (Color: Red, Varietal: All Varietals, Country: All Countries).

A related analysis is the consumption rate of each wine. As I explained, wines that are nearing the end of their peak drinking window should have high consumption rates, as would those that are favorites of the cellar owner or the restaurant's customers or those that have been strongly promoted. Exhibit 32 shows this analysis from the Tool for the sample cellar, which sorts the wines from highest to lowest consumption rates. The top wine is being consumed at the rate of slightly more than 1.5 bottles per month, so this wine could be a candidate for additional purchases.

**EXHIBIT 32**

**Wines having the highest consumption rate, in bottles per month**

Wine Analyses
✕

Wines Meeting the Criteria

[1.57]	[07/15]	Bedrock Wine Co   2018   Syrah   Syrah California   0.75 L
[0.82]	[03/04]	Turley   2019   Cinsault   Bechtholdt Vineyard Cinsault   0.75 L
[0.79]	[07/24]	San Felice   2016   Sangiovese, Colorino and Pignitello   Chianti Classico   0.75 L
[0.75]	[01/24]	Bodegas Olarra   2010   Tempranillo   Rioja Cerro Afion Reserva   0.75 L
[0.71]	[02/04]	Halcón Vineyards   2018   Mouvedre   Mouvedre   0.75 L
[0.71]	[02/04]	Halcón Vineyards   2018   Grenache   Grenache   0.75 L
[0.63]	[20/24]	Bodegas y Vinedos Valderiz   2016   Tempranillo Blend   Ribera del Duero   0.75 L
[0.59]	[03/10]	Apsara Cellars   2015   Syrah   Syrah, Las Madres Vineyard   0.75 L
[0.58]	[01/08]	Keep Wines   2018   Pinot Meunier   Pinot Meunier, Yount Mill Vineyard   0.75 L
[0.53]	[20/24]	Viticcio   2015   Sangiovese, Merlot & Syrah   Chianti Classico Riserva   0.75 L
[0.48]	[09/16]	Salchetto   2015   Sangiovese   Vino Nobile di Montepulciano   0.75 L
[0.44]	[06/07]	Apsara Cellars   2015   Syrah   Syrah, Las Madres Vineyard, Whole Clusters   0.75 L
[0.44]	[01/48]	Pillar Box   2008   Shiraz   Reserve Shiraz   0.75 L
[0.42]	[09/12]	Salvatore Moletteni   2012   Aglianico   Taurasi Vigna Cinque Querce   0.75 L
[0.42]	[05/06]	Keep Wines   2019   Pinot Meunier   Pinot Meunier, Yount Mill Vineyard   0.75 L
[0.38]	[03/04]	Quivet Cellars   2018   Syrah   Syrah Kenefick Ranch Vineyard   0.75 L
[0.36]	[05/12]	Proper Wines   2016   Syrah   Proper Syrah   0.75 L
[0.35]	[01/12]	Bodegas y Vinedos Valderiz   2014   Tempranillo Blend   Ribera del Duero   0.75 L
[0.33]	[02/03]	Alban   2016   Syrah   Patrina   0.75 L
[0.33]	[15/24]	Casaloste   2015   Sangiovese   Chianti Classico   0.75 L
[0.29]	[02/24]	Tommasi   2011   Sangiovese & Cab S   Poggio Al Tufo Rompicollo   0.75 L
[0.29]	[01/02]	Sandlands Vineyards   2018   Cinsault, Carignane, Zinfandel   Lodi Red Table Wine   0.75 L
[0.27]	[02/06]	Once and Future   2017   Mourvedre   Mataro Oakley Road Vineyard   0.75 L
[0.25]	[02/04]	Keep Wines   2016   Syrah   Syrah Napa Valley   0.75 L
[0.24]	[01/12]	Delmas   2014   Syrah, Viognier   Syrah Walla Walla Valley   0.75 L
[0.24]	[01/24]	Thomas Goss   2010   Shiraz   Shiraz   0.75 L
[0.23]	[01/24]	Calera   2010   Pinot Noir   Pinot Noir Central Coast 35th Anniversary   0.75 L
[0.23]	[02/12]	Proper Wines   2014   Syrah   Proper Syrah   0.75 L
[0.23]	[05/12]	Proper Wines   2015   Syrah   Proper Syrah   0.75 L
[0.23]	[06/12]	Delmas   2015   Syrah, Viognier   Syrah Walla Walla Valley   0.75 L
[0.22]	[01/24]	Chateau Tanunda   2008   Syrah   Grand Barossa Shiraz   0.75 L
[0.20]	[03/06]	Capraia   2013   Sangiovese   Chianti Classico Riserva   0.75 L
[0.20]	[01/05]	Rivers-Marie   2016   Pinot Noir   Occidental Ridge Pinot Noir   0.75 L
[0.19]	[01/12]	Delmas   2013   Syrah, Viognier   Syrah Walla Walla Valley   0.75 L
[0.18]	[01/24]	Marchesi de' Frescobaldi   2007   Cab S, Merlot, Cab F, Sangiovese   Tenuta di Castiglion Toscana Rosso   0.75 L
[0.18]	[02/12]	Proper Wines   2013   Syrah   Proper Syrah   0.75 L
[0.17]	[14/18]	Capraia   2013   Sangiovese   Chianti Classico Effe 55 Gran Selezione   0.75 L
[0.16]	[03/06]	Bedrock Wine Co   2017   Syrah   Syrah Coast to Foothills   0.75 L
[0.16]	[10/12]	Tenuta Bibbiano   2015   Sangiovese   Chianti Classico Riserva   0.75 L

Notes

The 'High Consumption' option lists wines in declining order of rate of consumption (measured in bottles per month).

The numbers in the second set of brackets are the number of bottles remaining of the number of bottles purchased.

Print Bottle Count by Winery & Vintage (sorted by winery)

Print Bottle Count by Winery & Vintage (sorted by bottles)

Close

**Analysis Options**

'Watch List' (drink-now wines)

'Consume-a-Bottle-By' Wines Consider.

High Consumption Rate  All Wines

Predicted Expiry Date  On-Hand Only

Corked Wines

Analyze Corked Wines by...

Closure

Vintage

Shipping Method

Vendor

Varietal

Winery

	Max Score	# Btls	Est Expiry Dt
<input type="radio"/> Every-Day Wines	99	1124	
<input type="radio"/> Reward-Day Wines	829	Btls/Wk: 2	
<input type="radio"/> Special Occ. Wines	95	328	
Total Bottles:		1781	Btls/Yr 10

Categorize Wines Based on

Rating Score  Purchase Price

Sort By

Drink-Now Score  Rating Score

Purchase Price  Winery

Print List < Pick a Wine for Me!

Filter By...

Color: Red

Varietal: All Varietals

Country: All Countries

Using the number of bottles on hand and the consumption rate of a wine, one can predict the date at which all of that wine will be consumed, assuming the consumption rate stays constant. I'll call this date the "expiry" date. The wines are sorted from near to far expiry dates. Exhibit 33 shows this analysis from the Tool, which is predicting that 18 wines will be fully consumed by the end of 2020. Again, wines that have predicted expiry dates near at hand may be candidates for additional purchases.

**EXHIBIT 33**

**Wines listed in ascending date of the predicted consumption of the last bottle on hand**

Wine Analyses ✕

Wines Meeting the Criteria

[07/29/20]	[01/24]	Bodegas Olarra   2010   Tempranillo   Rioja Cerro Añon Reserva   0.75 L
[08/10/20]	[01/08]	Keep Wines   2018   Pinot Meunier   Pinot Meunier, Yount Mill Vineyard   0.75 L
[08/27/20]	[01/48]	Pillar Box   2008   Shiraz   Reserve Shiraz   0.75 L
[09/11/20]	[02/04]	Halcón Vineyards   2018   Mourvedre   Mourvedre   0.75 L
[09/11/20]	[02/04]	Halcón Vineyards   2018   Grenache   Grenache   0.75 L
[09/13/20]	[01/12]	Bodegas y Vinos Valdertz   2014   Tempranillo Blend   Ribera del Duero   0.75 L
[10/01/20]	[01/02]	Sandlands Vineyards   2018   Cinsault, Carignane, Zinfandel   Lodi Red Table Wine   0.75 L
[10/06/20]	[03/04]	Turley   2019   Cinsault   Bedtholdt Vineyard Cinsault   0.75 L
[10/19/20]	[01/12]	Delmas   2014   Syrah, Viognier   Syrah Walla Walla Valley   0.75 L
[10/20/20]	[01/24]	Thomas Goss   2010   Shiraz   Shiraz   0.75 L
[10/27/20]	[01/24]	Calera   2010   Pinot Noir   Pinot Noir Central Coast 35th Anniversary   0.75 L
[10/31/20]	[07/15]	Bedrock Wine Co   2018   Syrah   Syrah California   0.75 L
[11/03/20]	[01/24]	Chateau Tanunda   2008   Syrah   Grand Barossa Shiraz   0.75 L
[11/17/20]	[01/05]	Rivers-Marie   2016   Pinot Noir   Occidental Ridge Pinot Noir   0.75 L
[11/18/20]	[03/10]	Apsara Cellars   2015   Syrah   Syrah, Las Madres Vineyard   0.75 L
[11/21/20]	[01/12]	Delmas   2013   Syrah, Viognier   Syrah Walla Walla Valley   0.75 L
[12/03/20]	[01/24]	Marchesi de' Frescobaldi   2007   Cab S, Merlot, Cab F, Sangiovese   Tenuta di Castiglioni Toscana Rosso   0.75 L
[12/19/20]	[02/03]	Alban   2016   Syrah   Patrina   0.75 L
[01/07/21]	[01/12]	Bodega Aster   2009   Tempranillo   Ribera del Duero Crianza   0.75 L
[01/09/21]	[02/24]	Tommasi   2011   Sangiovese & Cab S   Poggio Al Tufo Rompicollo   0.75 L
[01/20/21]	[01/03]	Myriad Cellars   2017   Syrah   Syrah Halcón Vineyard   0.75 L
[01/20/21]	[01/03]	Myriad Cellars   2017   Syrah   Syrah Las Madres Esther Block   0.75 L
[01/20/21]	[01/03]	Myriad Cellars   2017   Syrah   Syrah Sangiacomo   0.75 L
[01/26/21]	[01/03]	Halcón Vineyards   2017   Syrah   Alturas   0.75 L
[01/29/21]	[02/06]	Once and Future   2017   Mourvedre   Mataro Oakley Road Vineyard   0.75 L
[02/01/21]	[01/03]	Rivers-Marie   2017   Pinot Noir   Bearwallow Vineyard Pinot Noir   0.75 L
[02/01/21]	[01/03]	Rivers-Marie   2017   Pinot Noir   Platt Vineyard Pinot Noir   0.75 L
[02/01/21]	[01/03]	Rivers-Marie   2017   Pinot Noir   Summa Vineyard Pinot Noir   0.75 L
[02/12/21]	[03/04]	Quivet Cellars   2018   Syrah   Syrah Kenefick Ranch Vineyard   0.75 L
[02/16/21]	[02/04]	Keep Wines   2016   Syrah   Syrah Napa Valley   0.75 L
[03/06/21]	[02/12]	Proper Wines   2014   Syrah   Proper Syrah   0.75 L
[03/12/21]	[07/24]	San Felice   2016   Sangiovese, Colorino and Pugnitello   Chianti Classico   0.75 L
[03/12/21]	[01/06]	Reynvaan Family Vineyards   2014   Syrah   The Unnamed Syrah   0.75 L
[03/30/21]	[01/18]	Fox Gordon   2004   Shiraz   Eight Undes Barossa Valley   0.75 L
[04/07/21]	[01/12]	Rex Hill   2009   Pinot Noir   Willamette Valley Pinot Noir   0.75 L
[05/19/21]	[01/05]	Bedrock Wine Co   2015   Zinfandel blend   Zinfandel Old Vine   0.75 L
[05/22/21]	[02/12]	Proper Wines   2013   Syrah   Proper Syrah   0.75 L
[06/11/21]	[05/06]	Keep Wines   2019   Pinot Meunier   Pinot Meunier, Yount Mill Vineyard   0.75 L
[06/30/21]	[01/08]	Carlisle   2011   Zinfandel   Zinfandel, Sonoma Valley, Monte Rosso VV   0.75 L

Notes

The Predicted Expiry options lists wines by increasing date at which it is predicted the last bottle will be consumed. The dates are based on the number of bottles you currently have on-hand and the consumption rate of the wine since it was cellared.

The numbers in the second set of brackets are the number of bottles remaining of the number of bottles purchased.

Print Bottle Count by Winery & Vintage (sorted by winery)      Print Bottle Count by Winery & Vintage (sorted by bottles)      Close

Analysis Options

Watch List (drink-now wines)

Consume-a-Bottle-By Wines

High Consumption Rate

Predicted Expiry Date

Corked Wines

Analyze Corked Wines by...

Closure       Vintage

Shipping Method       Vendor

Varietal       Winery

Every-Day Wines      Max Score: 94      # Btls: 1124      Est Expiry Dt: [ ]

Reward-Day Wines      [ 229 ]      Btls/Wk: 2

Special Occ. Wines      Min Score: 96      [ 228 ]      [ ]

Total Bottles: 1791      Btls/Yr: 10

Categorize Wines Based on

Rating Score       Purchase Price

Sort By

Drink-Now Score       Rating Score

Purchase Price       Winery

Print List <      Pick a Wine for Me!

Filter By...

Color: Red

Varietal: All Varietals

Country: All Countries

Exhibit 34 illustrates the analysis of corked wines that can be performed in the Tool. To facilitate looking for patterns in the instances of corked wines, corked wines can be analyzed based on closure, shipping method, varietal, vintage, vendor, and winery.

**EXHIBIT 34**

**Corked wines**

Wine Analyses
✕

Corked Analysis Results

[08.33%][1][09/12] Anonymous Winery   2005   Grenache Blend   Anonymous Wine
--

**Notes**

The 'Corked Wine' option lists wines in declining order of rate of corked wines (measured in percentage of bottles purchased). The number shown is the percentage of corked bottles.

Print Bottle Count by Winery & Vintage (sorted by winery)

Print Bottle Count by Winery & Vintage (sorted by bottles)

**Analysis Options**

Watch List (drink-now wines)  
 Consume-a-Bottle-By Wines  
 High Consumption Rate  
 Predicted Expiry Date  
 Corked Wines

Analyze Corked Wines by...

Closure     Vintage  
 Shipping Method     Vendor  
 Varietal     Winery

Every-Day Wines    Max Price: 47    # Btls: 950    Est Expiry Dt:   
 Reward-Day Wines    Btls/Wk: 2  
 Special Occ. Wines    Min Price: 85    217    Btls/Yr: 10  
**Total Bottles: 1731**

**Categorize Wines Based on**

Rating Score     Purchase Price

**Sort By**

Drink-Now Score     Rating Score  
 Purchase Price     Winery

**Filter By...**

Color:

Varietal:

Country:

The Tool separates the wines in the cellar into three categories based on the rating score or the price, as discussed in the data section of the report. Every-Day wines, or wines for everyday consumption, would typically be the lowest rated and (most likely) the least expensive wines in the cellar. Reward-Day wines would be wines consumed on a special day of the week, such as a Friday evening. These wines would be rated higher and typically be more expensive than the Every-Day wines. Finally, there are the Special Occasion wines which are generally the most expensive wines in the cellar. The Tool allows cellar owners to determine how they would classify their wines into these categories. An exceptional cellar might have Every-Day wines rated 98 or lower, while the Special Occasion wines might be those with perfect scores (i.e., scores of 100). Other cellar owners might apply lower score cutoffs for what makes a Reward-Day or Special Occasion wine. Exhibits 35, 36, and 37 show lists of the cellar's Every-Day, Reward-Day, and Special Occasion wines. In this cellar, the Every-Day wines have prices up to and including \$47 per bottle, the Special Occasion wines have prices of \$85 per bottle and higher, and the Reward-Day wines fall between \$47 and \$85 per bottle. The Tool also offers various frameworks for ordering the wines in each category. The options are by Drink-Now score, by rating score, by purchase price, and by winery. By way of clarification, the Drink-Now score is a calculation that assigns a higher number to wines that are lower-rated, less expensive, single-vintage, and that are nearing the expiration of their peak drinking window. Wines that receive lower Drink-Now scores are those with higher rating scores, that are costlier, that are represented in the cellar by multiple vintages, and that have peak drinking windows extending further into the future.

**EXHIBIT 35**

**A list of Every-Day wines**

The screenshot shows the 'Wine Analyses' application window. The main area displays a list of wines under the heading 'Wines Meeting the Criteria'. Each entry includes a Drink-Now score, a rating score, a purchase price, and a list of wine details. The 'Analysis Options' panel on the right allows users to filter wines based on 'Watch List' (drink-now wines), 'Consume-a-Bottle-By' (High Consumption Rate, Predicted Expiry Date, Corked Wines), and 'Categorize Wines Based on' (Rating Score or Purchase Price). The 'Sort By' options include Drink-Now Score, Rating Score, Purchase Price, and Winery. The 'Filter By' section includes Color (Red), Varietal (All Varietals), and Country (All Countries). The 'Total Bottles' section shows 1781 bottles, with 614 bottles per week and 10 bottles per year. The 'Notes' section explains that Drink-Now scores are based on the rationale of drinking lower rated, less expensive, shorter-lived, single-vintage wines before higher rated, more expensive, longer lived, and multiple-vintage wines. The numbers in the third set of brackets are the number of bottles remaining of the number of bottles purchased.

Drink-Now Score	Rating Score	Purchase Price	Wine Details
[93]	[24.94]	[01/12]	Rex Hill   2009   Pinot Noir   Willamette Valley Pinot Noir   0.75 L
[92]	[14.97]	[01/24]	Chateau Tanunda   2008   Syrah   Grand Barossa Shiraz   0.75 L
[92]	[15.68]	[01/48]	Pillar Box   2008   Shiraz   Reserve Shiraz   0.75 L
[91]	[17.91]	[01/18]	Fox Gordon   2004   Shiraz   Eight Undes Barossa Valley   0.75 L
[92]	[18.31]	[01/12]	Bodega Aster   2009   Tempranillo   Ribera del Duero Crianza   0.75 L
[92]	[13.98]	[01/24]	Bodegas Olarra   2010   Tempranillo   Rioja Cerro Añon Reserva   0.75 L
[92]	[13.99]	[02/24]	Tommasi   2011   Sangiovese & Cab S   Poggio Al Tufo Rompicollo   0.75 L
[94]	[30.15]	[01/08]	Yalumba   2005   Shiraz Viognier   Hand Picked Barossa Valley   0.75 L
[90]	[35.78]	[01/02]	Carlisle   2011   Syrah   Syrah, Sonoma Mountain, Steiner Vineyard   0.75 L
[91]	[14.15]	[01/24]	Thomas Goss   2010   Shiraz   Shiraz   0.75 L
[93]	[22.46]	[01/24]	Calera   2010   Pinot Noir   Pinot Noir Central Coast 35th Anniversary   0.75 L
[92]	[41.00]	[02/04]	Keep Wines   2016   Syrah   Syrah Napa Valley   0.75 L
[90]	[28.80]	[03/04]	Turley   2019   Cinsault   Bechthold Vineyard Cinsault   0.75 L
[93]	[19.01]	[01/24]	Marchesi de' Frescobaldi   2007   Cab S, Merlot, Cab F, Sangiovese   Tenuta di Castiglion Toscana Rosso   0.75 L
[91]	[23.85]	[03/03]	Keep Wines   2017   Ciliegolo   Ciliegolo, Ripken Vineyard   0.75 L
[92]	[17.50]	[03/12]	Château Puygueraud   2005   Merlot, Cab S, Malbec   Côtes de Francs   0.75 L
[91]	[23.70]	[07/15]	Bedrock Wine Co   2018   Syrah   Syrah California   0.75 L
[96]	[40.01]	[02/12]	Poggio il Castellare   2004   Brunello   Brunello di Montalcino   0.75 L
[93]	[19.99]	[02/12]	Vecchia Cantina di Montepulciano   2006   Sangiovese   Vino Nobile di Montepulciano Redi Argo et Non Bria   0.75 L
[93]	[31.80]	[03/12]	Lucien Barrot   2005   Chateaufeuf Du Pape   Chateaufeuf Du Pape   0.75 L
[93]	[19.93]	[01/05]	Bedrock Wine Co   2015   Zinfandel blend   Zinfandel Old Vine   0.75 L
[92]	[35.32]	[01/01]	Bedrock Wine Co   2017   Barbera   Barbera Shake Ridge Ranch   0.75 L
[92]	[35.68]	[02/02]	Carlisle   2013   Zinfandel   Zinfandel, Kirschenmann Vineyard   0.75 L
[92]	[31.71]	[02/02]	Sandlands Vineyards   2018   Cinsault   Lodi Cinsault   0.75 L
[90]	[33.01]	[03/04]	Halcón Vineyards   2017   Grenache (70), Mouvedre (20), Syrah (10)   Esquisto   0.75 L
[93]	[40.72]	[01/01]	Bedrock Wine Co   2015   Carignan   Carignan Under the Mountain Vineyard   0.75 L
[92]	[35.71]	[01/02]	Sandlands Vineyards   2018   Cinsault, Carignane, Zinfandel   Lodi Red Table Wine   0.75 L
[91]	[23.00]	[03/06]	Bedrock Wine Co   2017   Syrah   Syrah Coast to Foothills   0.75 L
[92]	[44.06]	[01/01]	Bedrock Wine Co   2016   Field blend   Beduconi Red Wine   0.75 L
[90]	[20.04]	[03/05]	Bedrock Wine Co   2015   Syrah   Syrah North Coast   0.75 L
[90]	[38.55]	[04/04]	Halcón Vineyards   2017   Syrah   Elevación   0.75 L
[92]	[38.72]	[02/04]	Halcón Vineyards   2018   Grenache   Grenache   0.75 L
[92]	[38.72]	[02/04]	Halcón Vineyards   2018   Mouvedre   Mouvedre   0.75 L
[94]	[15.11]	[07/24]	San Felice   2016   Sangiovese, Colorino and Pugnitello   Chianti Classico   0.75 L
[92]	[31.89]	[01/02]	Bedrock Wine Co   2015   Zinfandel blend   Zinfandel Schmidt Road Vineyard   0.75 L
[91]	[24.71]	[01/01]	Keep Wines   2017   Pinot Meunier   Pinot Meunier, Yount Mill Vineyard   0.75 L
[92]	[24.71]	[01/01]	Keep Wines   2017   Counoise   Counoise Sierra Foothills, David Girard Vineyard   0.75 L
[94]	[22.61]	[15/24]	Casaloste   2015   Sangiovese   Chianti Classico   0.75 L
[88]	[25.97]	[01/04]	Carlisle   2011   Zinfandel   Zinfandel, Sonoma County   0.75 L

### A list of Reward-Day wines

Wine Analyses
✕

Wines Meeting the Criteria

[92] [\$50.71] [01/01] Sandlands Vineyards   2018   Merlot   Lodi Cinsault   0.75 L
[93] [\$48.62] [02/03] Carlisle   2012   Zinfandel   Zinfandel, Napa Valley, Hayne Vineyard   0.75 L
[96] [\$51.78] [08/12] Corte Pavone   2006   Brunello   Brunello Di Montalcino   0.75 L
[96] [\$60.93] [01/03] Bedrock Wine Co   2013   Syrah   Syrah Weill Exposition   0.75 L
[96] [\$47.99] [02/10] San Filippo   2004   Brunello   Le Lucere Brunello   0.75 L
[92] [\$47.03] [02/04] Bedrock Wine Co   2015   Syrah   Syrah Alder Springs   0.75 L
[95] [\$82.78] [02/03] Cayuse Vineyards   2012   Syrah (95), Viognier (5)   Walla Walla Valley Calloux Vineyard   0.75 L
[94] [\$47.81] [04/04] Carlisle   2016   Zinfandel (82%), other (12%)   Zinfandel, Russian River Valley, Carlisle Vineyard   0.75 L
[93] [\$47.54] [02/02] Fazenda Pradio   2017   Merenzao (Trousseau)   MRZ   0.75 L
[95] [\$47.81] [02/02] Carlisle   2016   Zinfandel (96%), Mouvedre (2%), mixed (2%)   Zinfandel, Sonoma Valley, Bedrock Vineyard
[97] [\$51.99] [03/06] Prats & Symington   2011   Touriga Nacional & Touriga Franca   Duoro Chryseia   0.75 L
[93] [\$47.86] [03/03] Bedrock Wine Co   2018   Mataro, Zinfandel, and Cabernet Pffer   Enz Vineyard Heritage   0.75 L
[93] [\$48.00] [02/06] Domaine de la Janasse   2006   Chateauneuf Du Pape   Chaupin   0.75 L
[93] [\$48.71] [03/03] Bedrock Wine Co   2018   Field Blend   Dolinsek Heritage3   0.75 L
[96] [\$47.81] [04/04] Carlisle   2016   Zinfandel (96%), Carignan (4%)   Zinfandel, Russian River Valley, Papera Ranch   0.75 L
[93] [\$51.20] [03/04] Quivret Cellars   2018   Syrah   Syrah Keneffick Ranch Vineyard   0.75 L
[94] [\$47.03] [03/04] Carlisle   2014   Zinfandel   Zinfandel, Russian River Valley, Saitone   0.75 L
[94] [\$47.04] [01/03] Bedrock Wine Co   2015   Zinfandel blend   Zinfandel Monte Rosso   0.75 L
[92] [\$53.42] [03/03] Myriad Cellars   2018   Syrah   Syrah Sangiacomo Whole Cluster   0.75 L
[93] [\$48.28] [02/02] Bedrock Wine Co   2018   Mataro & Grenache   Ode to Lucien   0.75 L
[93] [\$53.20] [02/02] Quivret Cellars   2018   Syrah   Syrah Keneffick Ranch Vineyard 100% Whole Cluster   0.75 L
[90] [\$83.16] [01/06] Reymvaan Family Vineyards   2014   Syrah   The Unnamed Syrah   0.75 L
[93] [\$47.81] [02/02] Carlisle   2016   Zinfandel (90%), Petite Syrah (3%), mixed (7%)   Zinfandel, Sonoma Valley, Rossi Ranch
[93] [\$49.95] [01/03] Carlisle   2013   Zinfandel   Zinfandel, Napa Valley, Hayne Vineyard   0.75 L
[95] [\$59.99] [10/12] Two Hands   2012   Shiraz   Bella's Garden Barossa Valley   0.75 L
[92] [\$53.36] [03/03] Bedrock Wine Co   2016   Syrah   Syrah Bien Nacido Vineyards X Block   0.75 L
[92] [\$72.33] [03/06] Quivret Cellars   2016   Cabernet Sauvignon   Napa Valley Cabernet Sauvignon   0.75 L
[93] [\$53.46] [03/03] Bedrock Wine Co   2018   30 varietals   Old Hill Ranch Heritage Wine   0.75 L
[93] [\$50.54] [03/03] Bedrock Wine Co   2016   Syrah   Syrah Sky Vineyard Mt. Veeder   0.75 L
[93] [\$61.90] [01/01] Bedrock Wine Co   2018   Zinfandel   Morgan's Wedding Cuvee   0.75 L
[92] [\$51.42] [01/03] Myriad Cellars   2017   Syrah   Syrah Sangiacomo   0.75 L
[92] [\$55.52] [01/01] Bedrock Wine Co   2017   Zinfandel   Zinfandel Sky Vineyard   0.75 L
[92] [\$47.81] [02/04] Carlisle   2016   Syrah (55%), Mouvedre (45%)   The Integral   0.75 L
[93] [\$50.52] [11/12] Chateau Duhart Milon Rothschild   2005   Bordeaux blend   Pauillac   0.75 L
[93] [\$70.53] [01/01] Carlisle   2017   Pinot Noir   Pinot Noir, Martaella Vnyd   0.75 L
[90] [\$47.25] [01/02] Carlisle   2011   Zinfandel   Zinfandel, Russian River Valley, Carlisle Vineyard   0.75 L
[93] [\$49.90] [02/02] Bedrock Wine Co   2017   Syrah   Syrah Sky Vineyard Mt. Veeder   0.75 L
[93] [\$64.00] [01/03] Rivers-Marie   2017   Pinot Noir   Platt Vineyard Pinot Noir   0.75 L
[93] [\$47.86] [03/03] Bedrock Wine Co   2018   Grenache, Cinsault, Mataro   Gambrel's of the Sky Grenache   0.75 L

**Notes**

The 'Reward-Day Wines' are the middle scoring (or moderately expensive) wines that you would consume on your 'reward' day of the week (e.g., Friday). The list includes all the wines scoring higher the maximum score (or price) for Everyday wines and below the minimum score (or price) for Special Occasion wines.

'Drink-Now' scores are based on the rationale of drinking lower rated, less expensive, shorter-lived, single-vintage wines before higher rated, more expensive, longer lived, and multiple-vintage wines.

The numbers in the third set of brackets are the number of bottles remaining of the number of bottles purchased.

Print Bottle Count by Winery & Vintage (sorted by winery)

Print Bottle Count by Winery & Vintage (sorted by bottles)

Close

**Analysis Options**

'Watch List' (drink-now wines)

'Consume-a-Bottle-By' Wines Consider.

High Consumption Rate All Wines

Predicted Expiry Date On-Hand Only

Corked Wines

Analyze Corked Wines by...

Closure

Vintage

Shipping Method

Vendor

Varietal

Winery

	<b>Max Price</b>	# Btls	Est Expiry Dt
<input type="radio"/> Every-Day Wines	47	950	
<input checked="" type="radio"/> Reward-Day Wines		614	Btls/Wk: 2
<input type="radio"/> Special Occ. Wines	<b>Min Price</b>	217	
	85	1781	Btls/Yr 10

**Categorize Wines Based on**

Rating Score  Purchase Price

**Sort By**

Drink-Now Score  Rating Score

Purchase Price  Winery

Print List <

Pick a Wine for Me!

**Filter By...**

Color: Red

Varietal: All Varietals

Country: All Countries

**EXHIBIT 37**

**A list of Special Occasion wines**

Wine Analyses X

Wines Meeting the Criteria

[95] [\$145.80] [1/3] Horsepower Vineyards   2013   Syrah   The Tribe Vineyard Syrah   0.75 L
[92] [\$105.00] [1/1] Bedrock Wine Co   2013   Syrah   Syrah Bedrock OB   1.5 L
[94] [\$93.06] [3/3] No Girls Wines   2016   Grenache   La Paciencia Vineyard Grenache   0.75 L
[92] [\$103.98] [3/4] Torrin Vineyard   2016   39% Syrah, 27% Tannat, 23% Cab S, 11% Grenache   Tsundered Red Blend   0.75 L
[92] [\$103.98] [2/2] Torrin Vineyard   2016   Syrah   Akasha Syrah   0.75 L
[97] [\$249.79] [1/1] Paul Jaboulet   2001   Syrah   Hermitage La Chapelle   1.5 L
[92] [\$89.89] [3/3] Cayuse Vineyards   2014   Syrah (95) & Viognier(5)   Walla Walla Valley Enchamberlin Vineyard   0.75 L
[93] [\$90.17] [3/3] Cayuse Vineyards   2016   Syrah   Walla Walla Valley En Cerise Vineyard   0.75 L
[94] [\$90.17] [3/3] Cayuse Vineyards   2015   Syrah (95) & Viognier(5)   Walla Walla Valley Enchamberlin Vineyard   0.75 L
[94] [\$98.85] [3/3] Cayuse Vineyards   2016   Syrah (95) & Viognier(5)   Walla Walla Valley Enchamberlin Vineyard   0.75 L
[93] [\$98.85] [3/3] Cayuse Vineyards   2017   Syrah   Walla Walla Valley En Cerise Vineyard   0.75 L
[92] [\$128.75] [2/2] Becklyn Cellars   2016   Cabernet Sauvignon   Missouri Hopper Vineyard Cabernet Sauvignon   0.75 L
[93] [\$86.73] [3/3] Rivers-Marie   2018   Pinot Noir   Summa Old Vines Pinot Noir   0.75 L
[92] [\$132.64] [1/2] Bedrock Wine Co   2017   Syrah   Syrah Bien Nacido Vineyard X Block   1.5 L
[92] [\$98.75] [2/2] Becklyn Cellars   2016   Cabernet Sauvignon   Moulds Vineyard Reserve Cabernet Sauvignon   0.75 L
[93] [\$132.84] [1/1] Bedrock Wine Co   2018   30 varietals   Old Hill Ranch Heritage Wine   1.5 L
[93] [\$109.65] [3/3] Cayuse Vineyards   2016   Syrah   Walla Walla Valley Armada Vineyard Syrah   0.75 L
[92] [\$102.00] [1/2] Becklyn Cellars   2015   Cabernet Sauvignon   Moulds Vineyard Cabernet Sauvignon   0.75 L
[92] [\$102.00] [2/2] Becklyn Cellars   2017   Cabernet Sauvignon   Moulds Vineyard Reserve Cabernet Sauvignon   0.75 L
[91] [\$206.78] [2/2] Cayuse Vineyards   2013   Syrah   Wallah Wallah Special #5 Syrah   1.5 L
[94] [\$225.72] [1/1] Cayuse Vineyards   2014   Syrah   Wallah Wallah Special #6 Syrah   1.5 L
[93] [\$193.62] [1/2] Cayuse Vineyards   2012   Syrah   Wallah Wallah Special #4 Syrah   1.5 L
[93] [\$213.90] [1/1] Cayuse Vineyards   2016   Syrah   Wallah Wallah Special #10 Syrah   1.5 L
[93] [\$92.52] [2/3] Cayuse Vineyards   2012   Grenache   God Only Knows Grenache   0.75 L
[94] [\$93.60] [1/3] Reynvaan Family Vineyards   2012   Syrah   Stonessence   0.75 L
[94] [\$87.34] [4/6] Reynvaan Family Vineyards   2015   Syrah   In the Hills   0.75 L
[92] [\$89.64] [1/1] Bedrock Wine Co   2018   Field blend   Evangelo Vineyard Heritage   1.5 L
[94] [\$89.44] [1/1] Bedrock Wine Co   2017   Field blend   Evangelo Vineyard Heritage   1.5 L
[92] [\$86.40] [3/3] Reynvaan Family Vineyards   2016   Syrah   In the Hills   0.75 L
[93] [\$90.17] [3/3] Cayuse Vineyards   2016   Syrah (95) & Viognier(5)   Walla Walla Valley Calloux Vineyard   0.75 L
[95] [\$89.89] [2/3] Cayuse Vineyards   2014   Syrah (95) & Viognier(5)   Walla Walla Valley Calloux Vineyard   0.75 L
[95] [\$91.80] [2/6] Reynvaan Family Vineyards   2013   Syrah   The Contender   0.75 L
[94] [\$138.33] [1/1] Thomas   2016   Pinot Noir   Pinot Noir, Dundee Hills   1.5 L
[92] [\$100.69] [2/3] Cayuse Vineyards   2013   Grenache   God Only Knows Grenache   0.75 L
[93] [\$98.85] [3/3] Cayuse Vineyards   2017   Syrah (95) & Viognier(5)   Walla Walla Valley Calloux Vineyard   0.75 L
[93] [\$133.33] [1/1] Thomas   2015   Pinot Noir   Pinot Noir, Dundee Hills   1.5 L
[95] [\$92.16] [1/3] No Girls Wines   2012   Grenache   La Paciencia Vineyard Grenache   0.75 L
[95] [\$113.40] [3/6] Reynvaan Family Vineyards   2013   Syrah   Stonessence   0.75 L
[92] [\$93.96] [4/6] Reynvaan Family Vineyards   2014   Syrah   The Contender   0.75 L

Notes

The 'Special Occasion Wines' are the highest scoring (or most-expensive) wines that you would consume on very special occasions. The list includes all the wines scoring at or above the designated minimum score (or price).

'Drink-Now' scores are based on the rationale of drinking lower rated, less expensive, shorter-lived, single-vintage wines before higher rated, more expensive, longer lived, and multiple-vintage wines.

The numbers in the third set of brackets are the number of bottles remaining of the number of bottles purchased.

Print Bottle Count by Winery & Vintage (sorted by winery)
Print Bottle Count by Winery & Vintage (sorted by bottles)
Close

**Analysis Options**

'Watch List' (drink-now wines)

'Consume-a-Bottle-By' Wines Consider:

High Consumption Rate  All Wines

Predicted Expiry Date  On-Hand Only

Corked Wines

Analyze Corked Wines by...

Closure  Vintage

Shipping Method  Vendor

Varietal  Winery

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Every- Day Wines: Max Price: 47, # Btls: 950, Est Expiry Dt: [ ]

Reward- Day Wines: [ 614 ], Btls/Wk: 2

Special Occ. Wines: Min Price: 85, [ 217 ], Total Bottles: 1781, Btls/Yr: 10

Categorize Wines Based on:  Rating Score  Purchase Price

Sort By:  Drink-Now Score  Rating Score

Purchase Price  Winery

Print List < Pick a Wine for Me!

Filter By... Color: Red, Varietal: All Varietals, Country: All Countries

When the Wine Analysis form illustrated in Exhibits 30-37 is open, the list of the wines can be printed by clicking the “Print List <” button. Exhibit 38 illustrates a portion of the report that would be printed for the Red Every-Day wines. There are two Bottle-Count reports that can be printed from the Wine Analysis form illustrated in Exhibits 30-37, which are accessible from the two buttons at the bottom of form, as shown in Exhibit 39. Exhibit 40 shows an excerpt from the report created by clicking the “Print Bottle Count by Winery & Vintage (sorted by winery)” button.

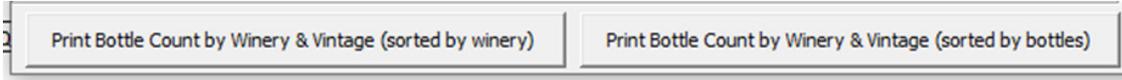
**EXHIBIT 38**

**An excerpt from the Print List function using Red Every-Day wines [new in Version 4]**

1	A	B	C	D	E	F	G	H
2	Score	Price per Btl	Btls On-Hand	Winery	Vintage	Varietal Type	Name	Btl Sz (L)
3	92	\$14.97	02/24	Chateau Tamunda	2008	Syrah	Grand Barossa Shiraz	0.75
4	93	\$24.71	01/12	Condado de Haza	2005	Tempranillo Blend	Ribera del Duero Crianza	0.75
5	92	\$15.68	02/48	Pillar Box	2008	Shiraz	Reserve Shiraz	0.75
6	93	\$24.94	01/12	Rex Hill	2009	Pinot Noir	Willamette Valley Pinot Noir	0.75
7	91	\$17.91	01/18	Fox Gordon	2004	Shiraz	Eight Uncles Barossa Valley	0.75
8	92	\$13.98	01/24	Bodegas Olarra	2010	Tempranillo	Rioja Cerro Afion Reserva	0.75
9	92	\$13.99	02/24	Tommasi	2011	Sangiovese & Cab S	Poggio Ai Tufo Romicollo	0.75
10	93	\$22.82	01/12	Vinosia	2004	Aglianico	Taurasi	0.75
11	92	\$18.31	01/12	Bodega Aster	2009	Tempranillo	Ribera del Duero Crianza	0.75
12	93	\$24.41	01/12	Glen Eldon	2003	Shiraz	Dry Bone Barossa	0.75
13	91	\$14.15	01/24	Thomas Goss	2010	Shiraz	Shiraz	0.75
14	94	\$27.63	02/24	La Rioja Alta	2004	Tempranillo	Rioja Viña Ardanza Reserva	0.75
15	93	\$22.46	01/24	Calera	2010	Pinot Noir	Pinot Noir Central Coast 35th Anniversary	0.75
16	94	\$30.15	01/08	Yalumba	2005	Shiraz Viognier	Hand Picked Barossa Valley	0.75
17	93	\$19.24	01/24	Vina Herminia	2009	Tempranillo	Rioja Excelsus	0.75
18	90	\$32.29	01/01	Sandlands Vineyards	2017	Trousseau	Sonoma Coast Trousseau	0.75
19	90	\$35.78	01/02	Carlisle	2011	Syrah	Syrah, Sonoma Mountain, Steiner Vineyard	0.75
20	93	\$19.01	01/24	Marchesi de Frescobaldi	2007	Cab S, Merlot, Cab F, Sangiovese	Tenuta di Castiglioni Toscana Rosso	0.75
21	93	\$19.93	01/05	Bedrock Wine Co	2015	Zinfandel blend	Zinfandel Old Vine	0.75
22	92	\$17.50	04/12	Château Puygéraud	2005	Merlot, Cab S, Malbec	Côtes de Francs	0.75
23	92	\$41.00	02/04	Keap Wines	2016	Syrah	Syrah Napa Valley	0.75
24	91	\$23.08	12/12	Bedrock Wine Co	2018	Syrah	Syrah California	0.75

**EXHIBIT 39**

The printable reports accessible at the bottom of the Wine Analysis form [new in Version 4]



**EXHIBIT 40**

An excerpt from the printable “Bottle Count by Winery & Vintage (sorted by winery)” report [new in Version 4]

Bottle Count by Winery and Vintage		
Winery	Vintage	Bits On-Hand
Albino Rocca	2007	14
Altesino	2012	12
Antinori	2015	29
	2016	2
	<b>Total</b>	<b>31</b>
Apsara Cellars	2016	4
Argiano	2009	4
Azilio Ghisolfi	2012	12
Becklyn Cellars	2015	5
	2016	10
	2017	8
	<b>Total</b>	<b>23</b>
Bedrock Wine Co	2013	5
	2014	11
	2015	59
	2016	55
	2017	55
	2018	24
	<b>Total</b>	<b>209</b>
Benoit Gaufer	2016	16
Bloomer Creek Vineyard	2014	2
	2015	2
	2016	11
	<b>Total</b>	<b>15</b>

In addition to the form-based lists that the Tool includes (shown in Exhibits 30-40), the Tool also includes two worksheets that provide actionable information and that contain the main data repositories of the Tool. The first is the "Purchases" worksheet, which lists all the wine purchases that have inventory on hand or that have yet to be delivered. The second is the "Inventory" worksheet, which serves to aggregate multiple purchases of the same wine and to perform calculations related to each wine's peak drinking window. Neither of these worksheets can be edited directly. To ensure the integrity of the worksheets, data can only be added to or removed from these worksheets using the Tool's interface forms. Both worksheets contain formatting and sorting capabilities that provide additional information. Exhibit 41 shows the sorting options for the Tool's "Purchases" worksheet in the Tool. For example, sorting the Tool's "Purchases" worksheet by "Rating Score" reorders the wines by declining rating score and ascending price, which allows the cellar owner to easily see what they paid for wines of a specific rating score.

**EXHIBIT 41**

**Sorting options for wines with on-hand inventory (found in the "Purchases" worksheet)**



Sorting and printing options for the "Inventory" worksheet of the Tool are illustrated in Exhibit 42. This worksheet also color codes two fields: the on-hand quantities, where wines with fewer than four bottles on hand are flagged; and the "drink-through" year (i.e., the end of the peak drinking window), which are color coded for the current year and the next thirteen years. At the start of each calendar year, the Tool automatically updates the color coding of the drink-through years. As an example, selecting "Sort by Drink-Through Year" will show the wines organized by drink-through year and the color-coding applied to each year. By selecting the different sorting options, the inventory sheet can be used much like the lists in Exhibits 30 through 40 for guiding one's selection of wines to consume or promote and for decisions about purchasing additional wine.

**EXHIBIT 42**

**Inventory sorting options [new Vertical sort option in Version 4]**



## DATA REQUIREMENTS

The basic requirement for managing a wine cellar using the Tool is straightforward: being disciplined with respect to recording wine inflows (purchases and gifts received) and outflow (consumption, sales, and gifts given). As I mentioned earlier, it can also be beneficial to occasionally perform a physical inventory count, to reconcile the electronic tally with the actual counts of wine on hand. With the Tool, the ongoing data recording efforts are minimal. Data recording will be relatively easy when you are starting a cellar from scratch, but I acknowledge that inputting the data for a well-established cellar will take time (or someone’s assistance), depending on the size of the cellar. The sooner the status of the spreadsheet matches the cellar status, the sooner that you can start using the analyses to guide consumption and other decisions.

In addition to the basic data requirements, the Tool also allows you to record tasting notes for each wine purchased. In addition, you may decide to change the drink-from or drink-through dates (i.e., the peak drinking window for a wine) based on your sensory analysis of how the wine is drinking, in which the Tool automatically recalculates all the affected analyses.

As noted earlier, to ensure the integrity of the Tool, you cannot enter or edit data directly into any of the worksheets—all changes are made via the forms accessible from the Tool’s “Switchboard” worksheet. I’ll explain each of the functions illustrated in Exhibit 43.

### EXHIBIT 43

#### Worksheet for access to the interface forms [new options in Version 4]

Wine Management Actions
Add New Wine Purchase
Update Wine Information
View Wine Analyses
Update Shopping List
Update Repeating Purchases
Cellar Planning

Data Maintenance Actions
Maintain Other Data
Set Scoring Options
Export Data
Import Data

Exhibits 44 through 47 display the interfaces in the Tool for entering and modifying data. Exhibit 44 illustrates the form for recording a new wine purchase. Since the drop-down lists “remember” data that have already been entered, you won’t have to repeat certain information for each wine purchase. Wines can be purchased without a “cellared date” being recorded, as would be the case for a wine purchased as a future<sup>6</sup>. The cellared date can be entered when the wine is received, via the form shown in Exhibit 44. Whether the cellar date is filled in automatically when the form is opened depends on whether you specify, on the main “Switchboard” worksheet, whether most of your wine purchases are made in-person or by orders. If the purchases are in person, the cellared date is automatically completed as the current date, whereas if the purchases are by orders, then the cellared date is left blank. Version 4 allows wines to have three special designations and a Consume-a-Bottle-By date. Exhibit 31 showed the analysis related to the Consume-a-Bottle-By wines.

6 A future is a wine paid for well in advance of when it is available. Futures are very common for classified-growth Bordeaux wines.

**EXHIBIT 44**

**Form for entering a wine purchase  
[Version 4 includes a third Special Designation and a Consume-a-Bottle-By date]**

Other changes to a wine are recorded via the form shown in Exhibit 45, which is accessed by clicking the “Update Wine Information” button shown in Exhibit 43. Once a wine has been selected, you can view, add to, or modify the tasting notes by clicking the “Show Tasting Notes” button. When the on-hand quantity of a purchased wine falls to zero, the wine is removed from the Tool’s “Purchases” worksheet and archived in the “Fully Consumed” worksheet.

**EXHIBIT 45**

**Form for modifying information regarding a wine  
[the third Special Designation and the Consume-a-Bottle-By date are new in Version 4]**

Wine Maintenance

Double-Click to Select the Desired Wine

Apsara Cellars   Shiraz/Syrah   Syrah, Las Madres Vineyard   2015   0.75 L   07-26-19   Vendor 80   6 of 6
Apsara Cellars   Shiraz/Syrah   Syrah, Las Madres Vineyard, Whole Clusters   2015   0.75 L   07-26-19   Vendor 80   1 of 1
Beddyn Cellars   Cab S   Napa Valley Cabernet Sauvignon   2017   0.75 L   06-04-19   Vendor 80   4 of 4
Carlisle   Cab S   Cabernet Sauvignon, Montecillo Vnyd   2017   0.75 L   10-14-19   Vendor 13   2 of 2
Carlisle   Gewürztraminer Blend   Compangi Portis   2017   0.75 L   01-17-19   Vendor 13   2 of 2
Carlisle   Grenache   Grenache, Rossi Ranch   2016   0.75 L   07-23-18   Vendor 13   3 of 3
Carlisle   Mourvedre Blend   Two Acres, Russian River Vly, Red   2016   0.75 L   07-23-18   Vendor 13   2 of 2
Carlisle   Petite Sirah   Petite Sirah, Palisades Vineyard   2016   0.75 L   01-18-18   Vendor 13   3 of 4
Carlisle   Petite Sirah   Petite Sirah, Sonoma County   2017   0.75 L   07-17-19   Vendor 13   3 of 3
Carlisle   Pinot Noir   Pinot Noir, Martaelia Vnyd   2017   0.75 L   10-14-19   Vendor 13   1 of 1
Carlisle   Shiraz/Syrah Blend   The Integral   2015   0.75 L   07-18-17   Vendor 13   2 of 2
Carlisle   Shiraz/Syrah Blend   The Integral   2016   0.75 L   07-23-18   Vendor 13   2 of 2
Carlisle   Shiraz/Syrah Blend   The Integral   2017   0.75 L   07-17-19   Vendor 13   3 of 3
Carlisle   Shiraz/Syrah   Syrah, Paso Robles, James Berry Vineyard   2016   0.75 L   07-23-18   Vendor 13   2 of 2
Carlisle   Shiraz/Syrah   Syrah, Russian River Valley Papa's Block   2017   0.75 L   01-17-19   Vendor 13   3 of 3
Carlisle   Shiraz/Syrah   Syrah, Santa Lucia Highlands, Rosella's VY   2012   0.75 L   07-17-19   Vendor 13   2 of 2
Carlisle   Shiraz/Syrah   Syrah, Santa Lucia Highlands, Rosella's VY   2015   0.75 L   07-18-17   Vendor 13   3 of 3
Carlisle   Shiraz/Syrah   Syrah, Santa Lucia Highlands, Rosella's VY   2016   0.75 L   07-23-18   Vendor 13   3 of 3
Carlisle   Shiraz/Syrah   Syrah, Sonoma County   2015   0.75 L   01-27-17   Vendor 13   3 of 3
Carlisle   Shiraz/Syrah   Syrah, Sonoma County   2017   0.75 L   01-17-19   Vendor 13   2 of 2
Carlisle   Zinfandel   Zinfandel, Mendocino Ridge, DuPratt VYs   2016   0.75 L   01-18-18   Vendor 13   3 of 3
Carlisle   Zinfandel   Zinfandel, Mendocino Ridge, DuPratt VYs   2017   0.75 L   07-17-19   Vendor 13   3 of 3
Carlisle   Zinfandel   Zinfandel, Russian River Valley, Carlisle Vineyard   2015   0.75 L   07-18-17   Vendor 13   6 of 6
Carlisle   Zinfandel   Zinfandel, Russian River Valley, Limerick Lane   2016   0.75 L   01-18-18   Vendor 13   2 of 2
Carlisle   Zinfandel   Zinfandel, Russian River Valley, Limerick Lane   2017   0.75 L   01-17-19   Vendor 13   2 of 2
Carlisle   Zinfandel   Zinfandel, Russian River Valley, Mancini Ranch Vyd   2015   0.75 L   01-27-17   Vendor 13   3 of 3
Carlisle   Zinfandel   Zinfandel, Russian River Valley, Montafi Vineyard   2016   0.75 L   01-18-18   Vendor 13   4 of 4
Carlisle   Zinfandel   Zinfandel, Russian River Valley, Montafi Vineyard   2017   0.75 L   01-17-19   Vendor 13   4 of 4
Carlisle   Zinfandel   Zinfandel, Russian River Valley, Papera Ranch   2015   0.75 L   07-18-17   Vendor 13   6 of 6
Carlisle   Zinfandel   Zinfandel, Russian River Valley, Piner-Olivet Ranches   2016   0.75 L   01-18-18   Vendor 13   2 of 2
Carlisle   Zinfandel   Zinfandel, Sonoma Valley, Bedrock Vineyard   2013   0.75 L   07-17-19   Vendor 13   3 of 3
Carlisle   Zinfandel   Zinfandel, Sonoma Valley, Bedrock Vineyard   2015   0.75 L   07-18-17   Vendor 13   2 of 2
Carlisle   Zinfandel   Zinfandel, Sonoma Valley, Pagani VY   2015   0.75 L   07-18-17   Vendor 13   2 of 2
Carlisle   Zinfandel   Zinfandel, Sonoma Valley, Pagani VY   2016   0.75 L   01-18-18   Vendor 13   3 of 3
Carlisle   Zinfandel   Zinfandel, Sonoma Valley, Pagani VY   2017   0.75 L   01-17-19   Vendor 13   4 of 4
Carlisle   Zinfandel   Zinfandel, Sonoma Valley, Rossi Ranch   2017   0.75 L   07-17-19   Vendor 13   3 of 3
Carpineto   Sangiovese   Vino Nobile di Montepulciano Riserva   2013   0.75 L   08-26-18   Vendor 64   11 of 12
Casaloste   Sangiovese   Chianti Classico   2015   0.75 L   06-05-18   Vendor 83   12 of 12
Castellare di Castellina   Sangiovese Blend   Chianti Classico   2017   0.75 L   10-23-19   Vendor 22   12 of 12
Castello Di Bolgheri   Cab S Blend   Bolgheri Varvra   2016   0.75 L   11-22-18   Vendor 22   11 of 12
Cayuse Vineyards   Grenache   God Only Knows Grenache   2011   0.75 L   10-18-13   Vendor 14   1 of 3
Cayuse Vineyards   Grenache   God Only Knows Grenache   2012   0.75 L   09-03-14   Vendor 14   2 of 3
Cayuse Vineyards   Grenache   God Only Knows Grenache   2015   0.75 L   11-01-17   Vendor 14   3 of 3
Cayuse Vineyards   Grenache   God Only Knows Grenache   2016   0.75 L   11-07-19   Vendor 14   3 of 3
Cayuse Vineyards   Shiraz/Syrah Blend   Walla Walla Valley Calloux Vineyard   2013   0.75 L   09-03-14   Vendor 14   2 of 2

Filter Wines, Based on Inventory  
 All Wines  Wines with Zero (0) Inventory  Wines with Inventory On-hand

Notes  
 Double-click a wine to load its information. Click the 'Save Changes' button to save any changes you make.

Search    Tasting Notes Exist

Winery / Producer: Carlisle  
 Country: US  
 Wine: Zinfandel, Russian River Valley, Papera Ranch  
 Region: Russian River Valley  
 Exact Origin: Papera Ranch  
 Vintage: 2015 Bottle Size (L): 0.75  
 Detailed Varietal Info: Zinfandel  
 Varietal Category: Zinfandel  
 Color: Red Closure: Cork (Natural)  
 Purchase Cost/Btl: \$47.05 Current Cost/Btl: \$46.98  
 Date Purchased: 7/18/2017 Date Cellared: 11/10/2017  
 Drink Next By: DNB Recorded:  
 Drink From: Drink Through: 2024  
 Number of Bottles  
 Purchased: 6 Corked: 0 On-Hand: 6  
 Custom Cat 1: Custom Cat 2:  
 Custom Data 1: Custom Data 2:  
 Score: Rating Source:  
 Source 1: 94 Rater 2:  
 Source 2:  
 Source 3:  
 Purchased From: Vendor 13  
 Shipping Method:  
 Special Designation 1: Carlisle  
 Special Designation 2:  
 Special Designation 3:  
 Location in Cellar:  
 Long-Hold Include:  Price  Score

When tasting notes exist for a wine, the “Tasting Notes Exist” box illustrated in Exhibit 45 will be checked. Clicking the “Show Tasting Notes” button alters the form to show any tasting notes that have been defined, as shown in Exhibit 46. You can also add, edit, or delete tasting notes from this view. Clicking the “Hide Tasting Notes” button returns the view to that shown in Exhibit 45.

**EXHIBIT 46**

**The tasting notes section of the Wine Maintenance form**

The screenshot displays the 'Wine Maintenance' form. On the left, a large text area shows a selected tasting note: "[12/18/2019] Developing nicely. Red currant, cherry, and floral notes on the nose and palate. Excellent tannin structure and acidity. Balanced. Elegant. Classic Barbaresco." Above this area is the instruction "Double-Click to Select the Desired Tasting Note".

On the right side of the form, various fields are populated:
 

- Winery / Producer: Unnamed Winery
- Country: IT
- Wine: Barbaresco
- Region: (empty)
- Exact Origin: (empty)
- Vintage: 2007
- Bottle Size (L): 0.75
- Detailed Varietal Info: Nebbiolo
- Varietal Category: Nebbiolo
- Color: Red
- Closure: Cork (TBD)
- Purchase Cost/Btl: \$34.63
- Current Cost/Btl: \$34.63
- Date Purchased: 1/26/2011
- Date Cellared: 1/28/2011
- Drink Next By: 1/1/2020
- DNB Recorded: 11/15/2019
- Drink From: (empty)
- Drink Through: 2025
- Number of Bottles: Purchased: 12, Corked: 0, On-Hand: 7
- Custom Cat 1: (empty)
- Custom Cat 2: (empty)
- WS Top 100: (empty)
- Custom Data 2: (empty)

At the bottom right, the 'Tasting Notes...' section includes:
 

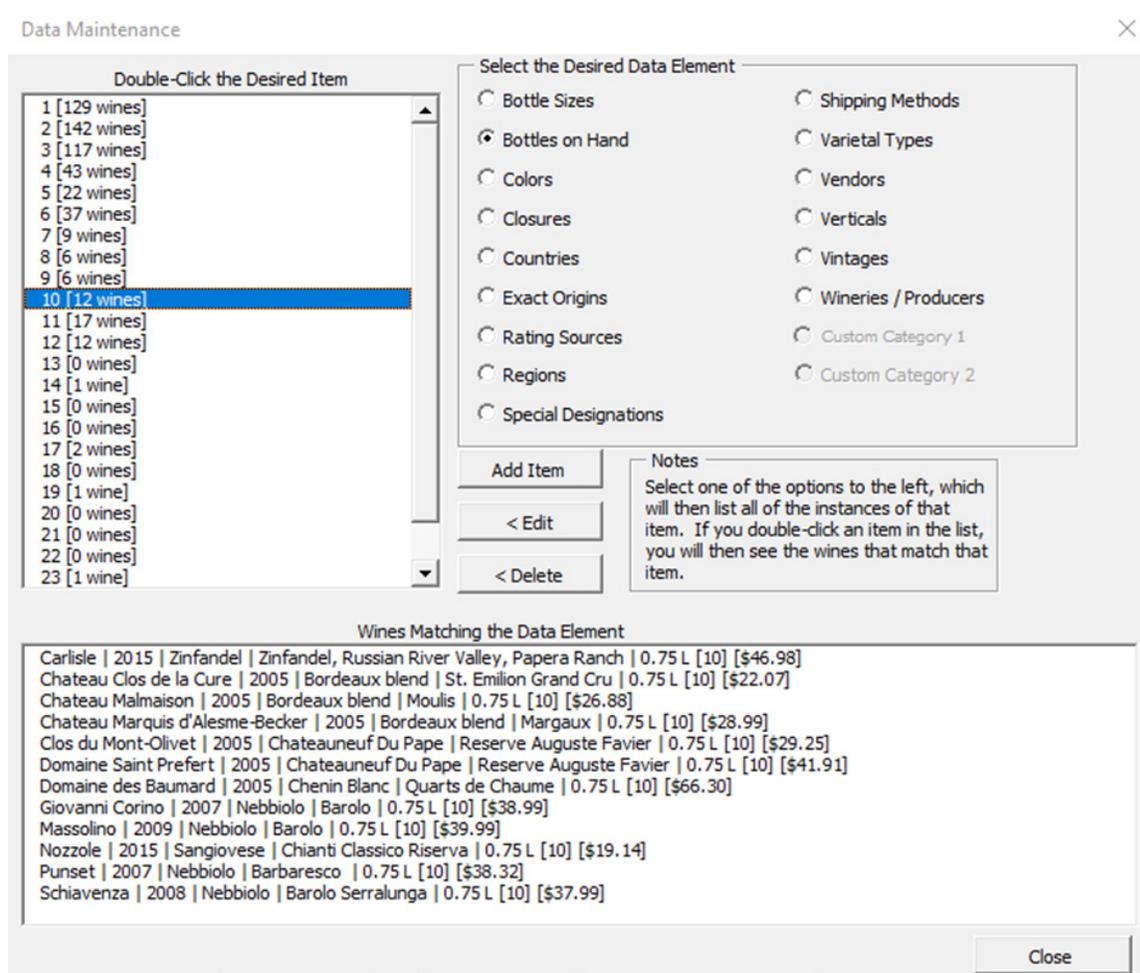
- Buttons: < Edit Tasting Note, < Delete Tasting Note, Add Tasting Note >
- Tasting Date: 12/19/2019
- Tasting Notes: (empty text area)

At the bottom left, there is a 'Notes' section with instructions: "Double-click to edit an existing tasting note. Click the 'Add Tasting Note' button to record the note. Click the 'Hide Tasting Notes' button to return to the list of wines." To the right of this is a search box and a checked checkbox labeled 'Tasting Notes Exist', with a 'Hide Tasting Notes' button below it.

Another interface form in the Tool is for modifying other data items, such as the lists of producers, wineries, or vendors, which is accessed via the “Maintain Other Data” button shown in Exhibit 43 and found on the Tool’s “Switchboard” worksheet. Exhibit 47 displays this form for the sample cellar. By double-clicking on a data item, the Tool displays all the wines that match that item. If you choose to delete a data item, the data field is reset as blank for all the selected wines though the wines themselves are not deleted.

**EXHIBIT 47**

**Form for modifying other data items [Bottles on Hand and Verticals are new in Version 4]**



The Scoring Options interface form in the Tool is accessed via the “Set Scoring Options” button shown in Exhibit 43 and found on the Tool’s “Switchboard” worksheet. Clicking this button brings up the form shown in Exhibit 48. This form allows you to specify how to report rating scores for wines that have multiple ratings, for the variety of rating score-related analyses. As an example, you can have the scores averaged, or select the rating score based on a prioritized order of the rating sources.

## EXHIBIT 48

### Setting the scoring options

**Reporting Scores for Wines with Multiple Ratings** X

Use Highest Rating

Use Average Rating

Use Priority Order

Priority 1: Personal

Priority 2: Famous Rating Source 1

Priority 3: Famous Rating Source 2

**Notes**

This is where you specify how the tool reports the score of wines that have multiple ratings. Selecting the "Highest" option reports the highest of the rating scores for each wine. Selecting the "Average" option reports the average of all the ratings. Selecting the "Priority Order" option allows you to specify a preferred order from among the different rating sources in your data. If it exists, the Priority 1 rating is reported; otherwise, the Priority 2 rating is used, if it exists. If a wine is not rated by any of the three prioritized sources, then the average of all other ratings are reported. After selecting your desired option, click the 'Save' button to update the wine scores, based on your choice.

Save Close

Another action accessible from the Tool’s “Switchboard” worksheet is the ability to export data (see Exhibit 43). Selecting this action will export the spreadsheet data to a file named “WineCellarData.txt,” which will appear on your computer’s desktop. The purpose of this export is to facilitate migrating the data to any future version of the Tool. However, the easiest way to import data from an earlier version of the Tool is by clicking the “Import Data” button shown in Exhibit 43. Having Version 4 of the Tool and an older version of the Tool both open in Excel® allows the direct import of data from the earlier version.

## CELLAR PLANNING

An important new capability of Version 4 is assisting cellar owners’ decisions about how to manage a purposeful decrease in the size of their cellars. The rationale for this capability relates to the role of wine cellars in their owners’ lives. It’s likely that cellars tend to grow during their owners’ middle age, largely related to their owners’ disposable income. At some point, however, the cellar owners are likely faced with the decision to downsize the cellar. For example, just because one had 1,000 bottles in one’s cellar at age 60 does not mean that one wants 1,000 bottles in the cellar at age 70. Confronting one’s mortality means thinking through the implications of maintaining a large cellar as one moves past middle age. While there are options for the cellar owner’s heirs to liquidate a cellar, the cellar owner may prefer to manage the liquidation personally.

Cellar Planning uses additional data as shown in the next two exhibits. The first new data are “Repeating Purchases”, illustrated in Exhibit 49, which can be accessed by clicking the “Update Repeating Purchases” buttons found in the Tool’s “Switchboard” (Exhibit 43) and “Cellar Plan” worksheets. Repeating Purchases are those the cellar owner makes on an annual or semiannual basis from specific wineries. Typical Repeating Purchases are those made from winery allocation or mailing lists. The popularity of some wineries can require a wait of six or more years before cracking the mailing lists. Also, the mailing lists are often “use-it-or-lose-it”, where one can be dropped from the list for missing only a single purchase offer. Together, these have the effect that once a person makes the list, they tend to continue purchasing from the list.<sup>7</sup>

7 For additional information on mailing lists, see:  
<https://blog.vinfolio.com/2017/08/25/ultimate-strategy-getting-best-california-wine-mailing-lists/>  
<https://www.winebid.com/WineAuctionNews/6/mailling-list-wines-how-and-why-to-get-on-a-list>  
<https://talk-a-vino.com/2019/01/24/lists-worth-waiting-for/>

**EXHIBIT 49**

**The “Repeating Purchases” form [new in Version 4]**

Repeating Purchases

Winery	Color	Bottles	Price	Points	Years	Priority	Use
Winery 0015	Red	12-6 (bottles)	\$41.00	92 (points)	1 (years)	4 (priority)	Use
Winery 0024	Red	24-12 (bottles)	\$43.00	93.5 (points)	4 (years)	5 (priority)	Use
Winery 0070	Red	24-12 (bottles)	\$47.00	93 (points)	7 (years)	5 (priority)	Use
Winery 0090	Red	12-6 (bottles)	\$104.00	94.5 (points)	6 (years)	5 (priority)	Use
Winery 0134	Red	6-6 (bottles)	\$84.00	93.5 (points)	5 (years)	3 (priority)	Use
Winery 0200	Red	12-6 (bottles)	\$45.00	92.5 (points)	2 (years)	3 (priority)	Use
Winery 0225	Red	12-6 (bottles)	\$33.00	92 (points)	2 (years)	3 (priority)	Use
Winery 0227	Red	6-6 (bottles)	\$85.00	93 (points)	3 (years)	2 (priority)	Use
Winery 0270	Red	12-12 (bottles)	\$52.00	93 (points)	3 (years)	3 (priority)	Use
Winery 0275	Red	6-6 (bottles)	\$92.00	94 (points)	8 (years)	4 (priority)	Use
Winery 0281	Red	6-6 (bottles)	\$50.00	92 (points)	3 (years)	2 (priority)	Use
Winery 0303	Red	6-6 (bottles)	\$48.00	92 (points)	4 (years)	2 (priority)	Use
Winery 0312	Red	12-6 (bottles)	\$40.00	93 (points)	3 (years)	4 (priority)	Use
Winery 0321	Red	6-6 (bottles)	\$105.00	94 (points)	5 (years)	2 (priority)	Use
Winery 0324	Red	18-12 (bottles)	\$62.00	93 (points)	3 (years)	3 (priority)	Use
Winery 0342	Red	6-6 (bottles)	\$40.00	92 (points)	3 (years)	4 (priority)	Use
Winery 0371	Red	6-6 (bottles)	\$80.00	94 (points)	10 (years)	2 (priority)	Use
Winery 0376	Red	6-6 (bottles)	\$104.00	93 (points)	3 (years)	2 (priority)	Use

Winery: Winery 0015  
 Color: Red  
 Ideal # of Bottles per Year: 12  
 Minimum # of Bottles per Year: 6  
 Estimated Average Price per Bottle: \$41.00  
 12-Month Average Price per Bottle: \$38.60  
 Average Rating Score: 92  
 Ideal Hold Time (Years): 1  
 Priority: 4  
 Use in the Cellar Plan:

Sort By...  
 Bottles per Year  
 Color  
 Hold Time  
 Price  
 Priority  
 Score  
 Use/Not  
 Winery

Notes  
 Use this form to track wines that you purchase repeatedly (i.e., yearly or more frequently). The list can be sorted by bottles per year, color, hold time, price, priority, score, or winery. Double-click a list item to edit it.

For each of the Repeating Purchases, you must provide estimates of the ideal and minimum number of bottles purchased per year, average price per bottle, average rating score, and an ideal hold time in years. For comparison purposes, the Tool will show you the average price of the wines from the specified winery, based on purchases made in the last 12 months (shown in the shaded cell in Exhibit 49).

An important attribute of each Repeating Purchase is its Priority, defined on a 1 to 5 scale, with 5 being the highest. When creating a cellar plan, as described below, the Tool uses the priorities to determine which Repeating Purchases should be terminated first.

The Cellar Planning form is shown in Exhibit 50. Key inputs are the “Zero-Cellar Date,” which is the date at which you wish to achieve your specified inventory targets; the maximum capacity of the cellar in bottles; and the minimum priority for the Repeating Purchases. You are given the options of categorizing wines into Every-Day, Reward-Day, and Special Occasion wines based either on the purchase price or the rating score. For each category of wine, and up to six wine colors represented in the cellar, you must supply an estimate of the future average cost per bottle, the average ideal bottle age (from the purchase year), the target inventory as of the Zero-Cellar Date, and the estimated annual consumption in bottles. To assist you in setting these values, the Tool reports the historical bottle costs and average age of bottles in the cellar for each color-category combination.

**EXHIBIT 50**

**The Cellar Planning form [new in Version 4]**

Cellar Planning
✕

Categorize Wines by

Rating Score

Purchase Price

Every Day Maximum Price

Special Day Minimum Price

Zero-Cellar Date

Maximum Cellar Capacity(btls)

Minimum Repeating Purchase Priority

		Red	Dessert	Rose	Sparkling	White
Bottles on Hand	Every Day	10	0	0	0	0
	Reward Day	12	0	0	0	0
	Special Day	2	7	0	0	0
Historical Average Bottle Cost	Every Day	\$42.89	\$50.18	\$23.57	\$9.51	\$37.60
	Reward Day	\$53.96	\$71.23	\$0.00	\$0.00	\$54.57
	Special Day	\$89.41	\$224.72	\$0.00	\$0.00	\$0.00
Future Average Bottle Cost	Every Day	\$25.00	\$40.00	\$0.00	\$0.00	\$20.00
	Reward Day	\$40.00	\$50.00	\$0.00	\$0.00	\$30.00
	Special Day	\$55.00	\$60.00	\$0.00	\$0.00	\$35.00
Historical Average Bottle Age (years)	Every Day	6.6	13.2	0.6	3.6	5.4
	Reward Day	5.4	12.3	0	0	3.2
	Special Day	5.3	21.8	0	0	0
Future Average Bottle Age (years)	Every Day	2	3	0	0	1
	Reward Day	4	5	0	0	2
	Special Day	8	9	0	0	3
Target Ending Inventory	Every Day	50	0	0	0	10
	Reward Day	50	10	0	0	10
	Special Day	80	10	0	0	5
Estimated Annual Consumption (Bottles)	Every Day	135	0	0	0	15
	Reward Day	67	3	0	0	5
	Special Day	25	0	0	0	0

Notes

This form allows you to create a plan for reaching a particular cellar size by a specified date. For each wine color, for each of the three days types (Every Day, Reward Day, and Special Day), you must specify: (1) the estimated future cost per bottle; (2) the estimated amount of time that you will hold the purchases; (3) the target ending inventory; and (4) the estimated annual consumption. For comparison purposes you are shown the values based on the current inventory. Clicking the 'Create the Plan' button will create a cellar plan, using the specified minimum priority for repeating purchases. Clicking the 'Evaluate RP Criterion' button will create cellar plans, using minimum priorities for repeating purchases of 1, 2, 3, 4, and 5.

Save Information
Print Information
Evaluate RP Priority Criterion
Create the Plan
Close

After clicking the “Create the Plan” button shown in Exhibit 50, the Tool’s “Cellar Plan” worksheet provides details on the plan, as illustrated in Exhibits 51 and 52. Exhibit 51 shows the overall plan information, including the years in which you should stop making the Repeated Purchases. This information can be printed using the “Print Summary” button illustrated in Exhibit 51.

**EXHIBIT 51**

**A cellar plan, part 1 [new in Version 4]**

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
1	Plan Summary by Year						Overall Plan Summary				Repeating Purchase Actions				
2	Year	Ttl End Inv	RP Cost	NRP Cost	Ttl Cost	Erly Btls		Cost of Repeating Purs	\$96,725.59			2023: last purchases of Winery 0371 (Red)			
3	2020	389	\$929.58	\$13,840.00	\$14,769.58	0		Cost of Non-Repeating Purs	\$50,195.00			2025: last purchases of Winery 0275 (Red)			
4	2021	406	\$11,184.00	\$2,185.00	\$13,369.00	0		Total Cost	\$146,920.60			2026: last purchases of Winery 0070 (Red)			
5	2022	423	\$11,184.00	\$2,185.00	\$13,369.00	0		Cost/Btl for Repeating Purs	\$53.86			2027: last purchases of Winery 0090 (Red)			
6	2023	440	\$11,184.00	\$2,185.00	\$13,369.00	0		Cost/Btl for Non-Repeating Purs	\$30.46			2028: last purchases of Winery 0134 (Red)			
7	2024	469	\$10,704.00	\$3,175.00	\$13,879.00	0		Total Cost/Bottle	\$42.66			2028: last purchases of Winery 0321 (Red)			
8	2025	522	\$10,704.00	\$3,685.00	\$14,389.00	0		Repeating Pur Priorities Used	>=2			2029: last purchases of Winery 0024 (Red)			
9	2026	563	\$10,152.00	\$3,265.00	\$13,417.00	0		Cellar Planning				2029: last purchases of Winery 0303 (Red)			
10	2027	616	\$9,024.00	\$4,705.00	\$13,729.00	0		Update Repeating Purchases				2030: last purchases of Winery 0227 (Red)			
11	2028	679	\$7,776.00	\$5,205.00	\$12,981.00	0		Print Summary				2030: last purchases of Winery 0270 (Red)			
12	2029	711	\$6,642.00	\$4,165.00	\$10,807.00	0		Print Color-Based Plan				2030: last purchases of Winery 0281 (Red)			
13	2030	706	\$5,322.00	\$3,525.00	\$8,847.00	0						2030: last purchases of Winery 0312 (Red)			
14	2031	572	\$1,428.00	\$1,935.00	\$3,363.00	0						2030: last purchases of Winery 0324 (Red)			
15	2032	341	\$492.00	\$140.00	\$632.00	0						2030: last purchases of Winery 0342 (Red)			
16	2033	225	\$0.00	\$0.00	\$0.00	0						2030: last purchases of Winery 0376 (Red)			
17												2030: last purchases of Winery 0200 (Red)			
18												2031: last purchases of Winery 0225 (Red)			
19												2032: last purchases of Winery 0015 (Red)			

Exhibit 52 shows the color-based plan information, which includes, by year and wine category, the number of bottles purchased as Repeating Purchases (RPs) and Non-Repeating Purchases (NRPs), year-end inventories, and total cost. This information can be printed using the “Print Color-Based Plan” button illustrated in Exhibit 51.

**EXHIBIT 52**

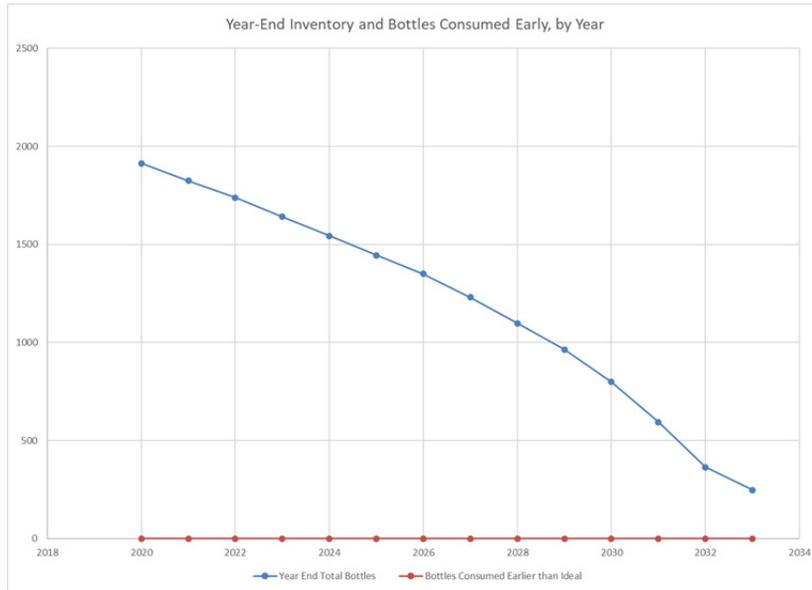
**A cellar plan, part 2 [new in Version 4]**

22	Color-Based Plan													
23	Red Every-Day				Red Reward-Day				Red Special-Day				Red	
24	Year	RPs	NRPs	End Inv	Cost	RPs	NRPs	End Inv	Cost	RPs	NRPs	End Inv	Cost	Ttl Cost
25	2020	8	0	889	\$33.58	6	0	593	\$84.00	30	0	255	\$392.00	\$509.58
26	2021	102	0	856	\$4,308.00	30	0	556	\$1,740.00	24	0	254	\$2,310.00	\$8,358.00
27	2022	102	0	823	\$4,308.00	30	0	519	\$1,740.00	24	0	253	\$2,310.00	\$8,358.00
28	2023	90	0	778	\$3,768.00	30	0	482	\$1,740.00	24	0	252	\$2,310.00	\$7,818.00
29	2024	90	0	733	\$3,768.00	30	0	445	\$1,740.00	24	0	251	\$2,310.00	\$7,818.00
30	2025	90	0	688	\$3,768.00	30	0	408	\$1,740.00	18	0	244	\$1,800.00	\$7,308.00
31	2026	90	0	643	\$3,768.00	30	0	371	\$1,740.00	12	0	231	\$1,248.00	\$6,756.00
32	2027	66	0	574	\$2,640.00	30	0	334	\$1,740.00	12	0	218	\$1,248.00	\$5,628.00
33	2028	66	0	505	\$2,640.00	30	0	297	\$1,740.00	0	0	193	\$0.00	\$4,380.00
34	2029	66	0	436	\$2,640.00	30	0	260	\$1,740.00	0	0	168	\$0.00	\$4,380.00
35	2030	42	0	343	\$1,608.00	24	0	217	\$1,368.00	0	0	143	\$0.00	\$2,976.00
36	2031	24	4	236	\$988.00	0	0	150	\$0.00	0	0	118	\$0.00	\$988.00
37	2032	12	0	113	\$492.00	0	0	83	\$0.00	0	0	93	\$0.00	\$492.00
38	2033	0	0	50	\$0.00	0	0	52	\$0.00	0	0	81	\$0.00	\$0.00

After clicking the “Create the Plan” button shown in Exhibit 50, you can also view the year-end inventory and bottles consumed early chart shown in Exhibit 52 (the “Cellar Plan Bottles” worksheet). Bottles consumed early are those that are consumed sooner than their ideal holding time. Such consumption may be necessary given the cellar capacity limit and the length of the ideal holding period. For the example shown in Exhibit 53, the year-end inventory decreases quite consistently from its current level of over 2,000 bottles to its target of 225 bottles in 2033. This plan requires no early consumption of bottles.

**EXHIBIT 53**

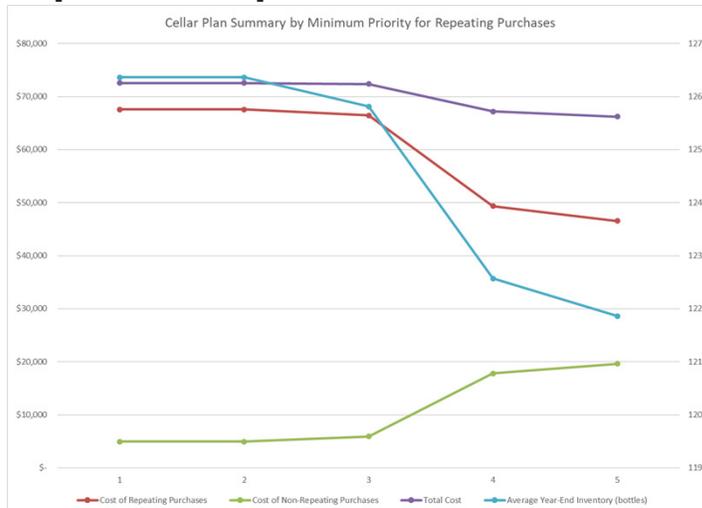
**Year-end inventory and bottles consumed early in the cellar plan [new in Version 4]**



Clicking the “Evaluate RP Priority Criterion” button shown in Exhibit 50 results in the Tool performing a sensitivity analysis of the “Minimum Repeating Purchase Priority” shown in Exhibit 50. The results are illustrated in Exhibit 54 (the “Cellar Plan by RP Priority” worksheet). For the cellar in question, as the Minimum Repeating Purchase Priority increases, the lifetime total cost decreases as does the lifetime cost of the Repeating Purchases. The reason for this is that for the cellar in question, the non-repeating purchases have a lower cost per bottle, so maintaining the Repeating Purchases increases the overall average bottle price. This analysis could be very helpful to cellar owners wishing to explore the effects of maintaining their Repeating Purchases while shrinking their cellar size.

**EXHIBIT 54**

**Cellar Plan Summary chart [new in Version 4]**



## SUMMARY

This report explains how you can use the spreadsheet-based Tool described here to help manage your wine cellar. The Tool is designed to be as useful and straightforward as possible. If you are methodical about recording the inflows and outflows of wine to and from the cellar, you may find the large number of possible analyses useful in guiding your decisions about the cellar. Managing a wine cellar using a spreadsheet is an ongoing process, which changes as the composition of the cellar changes. I've tried to make the spreadsheet Tool useful by having it provide guidance on what to drink or what to promote, so that no wine passes its peak drinking window. I believe that the Wine Cellar Management Tool fulfills this objective.

No tool like this is ever truly complete. I am already compiling a list of features that could appear in Version 5. These include: tracking other items over time, including verticals and rating distributions; incorporating an annual budget into the Cellar Planning feature; and using bar codes and scanners to track the inventory. If you have some suggestions, please feel free to share them with me via email: [gmt1@cornell.edu](mailto:gmt1@cornell.edu).

## APPENDIX: VERSION 4 DETAILS

This section presents a short summary of how Version 4 compares to earlier versions of the Tool. Exhibit 55 shows comparison metrics for Versions 2, 3, and 4. From the increase in the number of exhibits, it should be clear that this Report is more thorough in its coverage and that the capability of the Tool has grown through its four versions. As the Tool does not allow any direct data entry, with everything being controlled through forms, the amount of back-end Visual Basic for Applications (VBA) code is an indicator of complexity. Compared to Version 3, the VBA code in Version 4 has increased by over 41 percent. This primarily reflects the back-end support necessary to implement the Cellar Planning capability.

### EXHIBIT 55

#### Comparison metrics for the Report and Tool versions 2, 3, and 4

	Version 2.0	Version 3.1	Version 4.0
Exhibits in the Report (excluding the ones in this appendix)	25	10	54
Lines of VBA Code	9,772	11,350	16,064
Percent Increase Compared to Previous Version		16.1	41.5

Exhibit 56 lists the 27 new features and 23 bug fixes in Version 4 of the Tool. As mentioned earlier, the key new feature is the cellar planning capability but there are many new reports, which were described earlier.

**EXHIBIT 56**

**Version 4 change list**

New Features	
1	You can now use the tool for planning the decline of the cellar over time (to hit a desired inventory level at some future date)
2	For cellar planning, you can define Repeating Purchases (e.g., from winery allocations or mailing lists) via a new form
3	A new chart shows the cellar plan costs under restrictions on the Repeating Purchases
4	A new chart shows the future year-end inventories and bottles consumed early (related to cellar planning)
5	You can now set a 'consume-a-bottle-by' date for each wine
6	In the Wine Analysis form, you can now display the 'consume-a-bottle-by' dates
7	A new chart shows the distribution of total bottles by bottle price
8	A new chart shows the distribution of total value by bottle price
9	A new chart shows the percentage of total bottles and cellar value for the 20 wineries with the most bottles
10	The Cellar History Pt 3 chart now also displays the number of unique wines in the cellar
11	New reports list bottle counts by winery and vintage (accessible via the Wine Analysis form)
12	Double-clicking a wine shown in the Wine Analysis form will now show you that wine in the Wine Maintenance form
13	Sort options on the Purchases sheet are now listed alphabetically
14	The wine analysis form allows you to print pull lists based on wines displayed in the Wine Analysis form
15	You can now print lists of wines from the Wine Analysis form: Watch List wines; Consume-a-Bottle-By wines; High Consumption Rate wines; Predicted Expiry Dates wines; Corked wines; Everyday wines; Reward-Day wines; and Special Occasion wines
16	Can now print up to 85 wines on one page from the Inventory tab
17	In the Data Maintenance form, selecting bottles-on-hand will now list all wines with that number on-hand
18	You can now change the vintage of a purchased wine without changing all such purchases
19	You can now change the bottle size of a purchased wine without changing all such purchases
20	The Wineries (Value) chart now includes the average rating for each winery
21	To ensure data integrity, you must now define a color before saving a wine
22	The Wine Maintenance form now indicates if the current wine has any tasting notes
23	Tasting Notes listed in the Wine Maintenance form now display over as many lines as necessary to show the entire note
24	The Wine Analysis form now allows you to filter wines by country
25	Total bottles are now reported on the Wine Analysis form
26	The more complex charts now use smaller symbols
27	The number of wines reported on the "Cellar History, Pt 3" chart is now based on the wines on the Inventory sheet, not the Purchases sheet

Bug Fixes	
1	Fixed a problem with the number of special designations in the history chart
2	Fixed a problem listing wines by country
3	Fixed a problem with changing the vintage of a purchase
4	Corrected the bottles on hand count in the Data Items tab
5	In the Cellar History Pt 2 chart, the total cellar value is now in integer \$ values
6	Predicted expiry dates are no longer shown for wines with 0 bottles on hand
7	When removing a special designation (SD) via the Data Maintenance form, that SD is removed from the history chart
8	Saving a wine now updates the wine's rating on the inventory sheet, if appropriate
9	Wines with 0 bottles on hand are no longer shown on the Data Maintenance form
10	The Shipping Method field is no longer lost when sorting purchases (on the Purchases sheet)
11	Duplicate special designations for a wine cannot be specified and the tool removes earlier duplicates
12	Fixed the problem of invalid messages when saving wines with tasting notes
13	Fixed the problem of the tasting note list being too short
14	Fixed a problem with the date formats of Purchased and Cellared dates on the Purchases sheet
15	Removed some color-coding on the Purchases and Inventory sheets because they were applied inconsistently
16	Fixed a problem with the "Pick-a-Wine-for-Me" function
17	The Needed in the 'Btls Avl by Yr' chart is now based on the most recent 3 months' wine consumption
18	Fixed a problem with deleting a Special Designation
19	Fixed a problem with the Tasting Notes box appearing too small
20	Fixed a problem with invalid messages about Tasting Notes
21	Fixed an issue with how the Cellar Date and Purchase Date were displayed on the Purchases sheet
22	Fixed a problem with "FALSE" appearing as a Special Designation
23	Fixed a problem with "place holder" appearing in the list of countries and in the "Countries" and "Cellar History, Countries" charts

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