

Missouri's Distilling Industry: A 2019 Perspective

EXECUTIVE SUMMARY

A February 2020 survey of Missouri distillers collected information used to analyze the industry's economics and serve as a benchmark for measuring future growth. Twenty-two distillers responded to the survey—a high 35% response rate—and provided responses about spirit production, sales, and input costs. Multiple steps were taken to ensure survey respondent confidentiality, and no results that can identify a particular distiller are displayed.

Although Missouri has a long history with distilled spirits, much of the state's growth in distilleries occurred in the past few years; just less than half (45%) of respondents were in a startup stage when they responded to the survey. The total number of proof gallons sold by smaller distillers grew at an average rate of 33% between 2015 and 2018 as new firms started production. Before COVID-19, most firms planned to expand production in 2020; smaller distillers had prepared to more than double their spirit production by 2021. The pandemic has changed those plans and prioritized distillers' need for pursuing direct-to-consumer online sales.

Distillers sell more than spirits and alcoholic beverages, which contributed 61% of total revenue in 2019. They offer food, venue rentals, tours, and other services to visitors. Respondents hosted 257,000 visitors in 2019, and the survey findings suggest that a distiller's tourism market reach grows as the business increases in size. Before the COVID-19 pandemic, distillers optimistically projected that visitor counts would grow by more than 50% between 2019 and 2021.

Survey respondents indicated that typical startup costs for two years total just more than \$300,000 for machinery, equipment, and construction. In 2019, smaller distillers employed a median of four people, including full- and part-time jobs. Full-time pay averaged \$42,500 a year. For every \$1 of spirit sales, respondents said they spent between 30% and 40%, depending on distiller size, on inputs. Smaller distillers made 57% of all input purchases from Missouri farms or companies; such purchases support jobs and income in the Show-Me State.

September 2020

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INTRODUCTION

A February 2020 survey collected information to analyze the Missouri distilling industry's economic contribution. The survey gathered information, especially on Missouri's startup distilleries, that would have been missed by using only data from government organizations or private business data vendors. The survey was necessary to provide accurate information for the economic analysisⁱ and ensure Missouri distillers have a better benchmark for measuring industry growth in the years ahead.

SURVEY METHODOLOGY AND NOTES

The Missouri distiller survey asked about spirit production, sales, and input costs; find the full list of survey questions in Appendix A. University of Missouri faculty contacted 62 distillers that were producing product or planning their operations, and they received 22 completed online surveys. The 35% response rate is relatively high for a business survey. Several steps were taken to reach this response rate:

- The Missouri Craft Distillers Guild held meetings and sent emails to prepare distillers for the upcoming survey. Survey questions were provided to distillers as a paper-based worksheet, so they could prepare responses in advance.
- Missouri Craft Distillers Guild leaders and the project steering committee assisted with outreach and provided contact information for initial and follow-up contact efforts.
- The online survey was administered anonymously through Qualtrics web-based survey software. No names, IP addresses, or location information were collected in order to protect identities and encourage responses.
- Respondents were informed that only aggregated survey results would be used for reporting to further protect their identities.

Not all survey questions are summarized in this report to protect respondent confidentiality. Survey results were aggregated and, when possible, shown by distiller size. Responses from smaller distillers outnumbered larger distillers, so this report contains more information from smaller distillers.

Describing the typical characteristics of a distiller helped develop an economic contribution analysis, and spirit producers can use the findings to understand how they compare with others in their industry. The report uses three statistical measures to describe a "typical" characteristic:

- An **average**, or mean, is valuable in larger surveys but can be misleading in this survey as outlying data points create averages that are far from typical for any respondent.
- A **median**, the middle point of all entries, is the value with an equal number of responses above it and below it. This summary measure is useful when data contain outliers that can pull an average too far in one direction and make it less representative of the whole sample.
- The **trimmed average**, an alternative measure used to create an average and here uses the middle 80% of data points. This measure can be a better fit when a small number of survey responses are outliers from the mean.ⁱⁱ

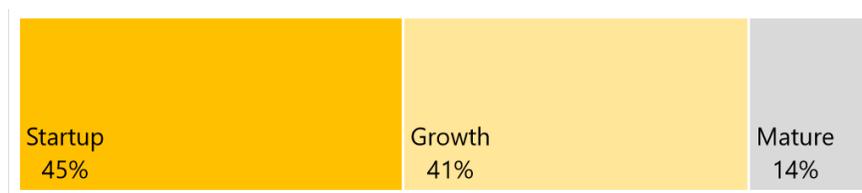
This report mainly uses median values and trimmed averages to describe typical distiller characteristics, due to the small number and range of responses. Both measures are shown if the values reasonably represent a typical distiller characteristic.

SURVEY RESPONSES

Distillers by Business Stage, Permit Year, and Production

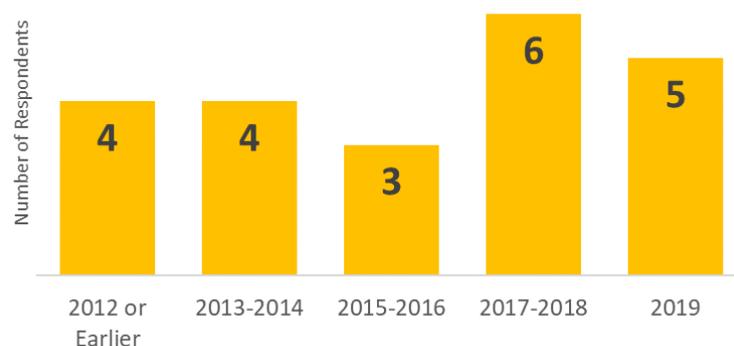
Although Missouri has a long history with distilled spirits, much of Missouri distilleries' growth occurred in the past few years. Just less than half of respondents (45%) said that in 2019 they were in the startup stage, defined as having some initial sales but no profit yet (see Chart 1). Forty-one percent were in a growth stage, defined as increasing sales, capturing low profit, and being investment-focused. Fourteen percent described themselves as mature with stable sales and profit and a focus on new products and markets. No respondents described themselves as in the development stage or indicated their business had declined or exited from the industry.

CHART 1: SURVEY RESPONDENTS BY BUSINESS STAGE



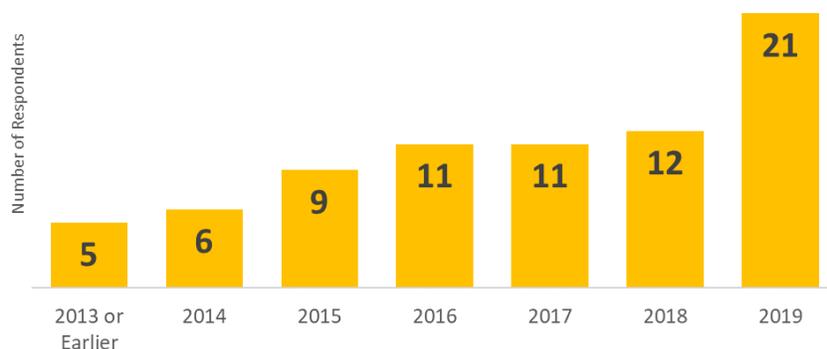
Survey respondents received their Distilled Spirits Production permits (DSPs), which are required to sell spirits, across a range of years as shown in Chart 2. Not all distillers begin selling right away. Navigating the licensing and permitting process at the local, state and federal levels, as well as the desire to sell an aged product like bourbon, can affect the length of time between making an investment and making a sale.

CHART 2: RESPONDENTS BY DISTILLED SPIRITS PRODUCTION (DSP) PERMIT YEAR



In 2013, five respondents produced spirits. (See Chart 3.) The number of operations with production grew steadily since then as other distillers began production. To protect respondent confidentiality, production totals and growth over time are not shown.

CHART 3: CUMULATIVE RESPONDENTS BY YEAR PRODUCTION STARTED



By 2019, most responding distillers produced less than 10,000 proof gallons¹ (PG) a year, as shown in Table 1, and were considered smaller operations in this report. For this report's purposes, a larger operation would produce 10,000 PG or more. More precise figures on production size are not disclosed to protect survey respondent identities.

TABLE 1: SURVEYED MISSOURI DISTILLERIES BY SIZE (2019)

Total Production in Proof Gallons	Count	Percent
Smaller: Less than 10,000 PG	16	78%
Larger: 10,000 PG or more	5	22%
Total	21	100%

Distiller Growth Projections for 2020-2021 before COVID-19

All 22 respondents in February 2020—the month before Missouri's COVID-19 stay-at-home order was implemented—planned to produce spirits in 2020. Most firms (86%) also had plans to expand production in 2020. Smaller distillers—those producing less than 10,000 PG—had planned to more than double spirit production by 2021. Because this survey was conducted prior to the COVID-19 pandemic, which caused major disruptions in the U.S., these encouraging growth projections have likely been severely impacted.

Spirits Sold and Markets

Nineteen of the survey respondents (86%) sold spirits in 2019; most respondents making sales were smaller distillers that produced less than 10,000 PG a year. Two additional startup distillers produced spirits in 2019 but had no sales. As with total production volumes, more exact figures on proof gallons sold are not disclosed to protect survey respondent identities.

Missouri distillers produce a range of spirits, and those that offer aged products carefully must balance expansion with sales. In any given year, total production and sales will differ depending on how many gallons of spirits are put into or removed from aging. For example, in 2019, smaller distillers produced

¹ A proof gallon (PG) is a common unit used by the U.S. Alcohol and Tobacco Tax and Trade Bureau. Its definition reads, "A proof gallon is one liquid gallon of spirits that is 50% alcohol at 60 degrees F. Distilled spirits bottled at 80 proof (40% alcohol) would be 0.8 proof gallons per gallon of liquid. At 125 proof, a gallon of liquid would be 1.25 proof gallons."

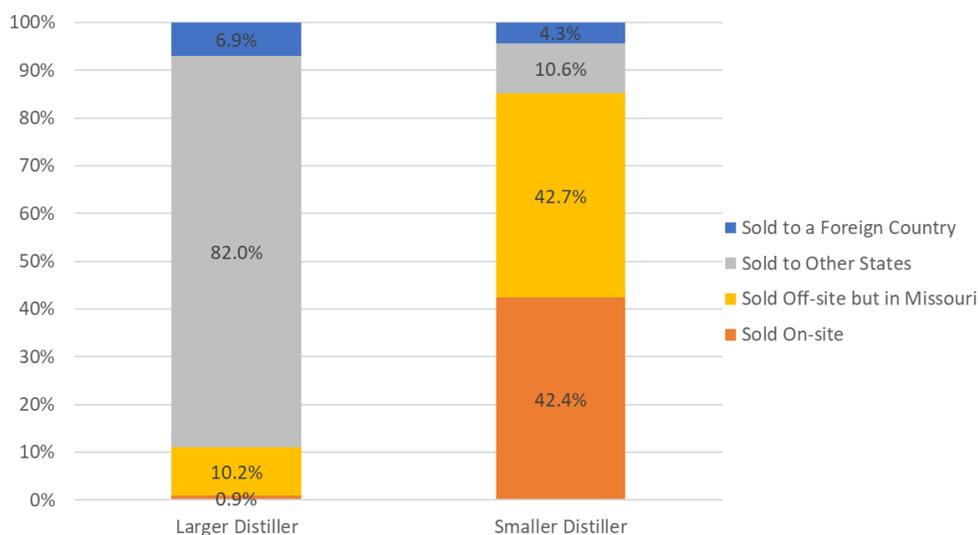
more than twice as many spirit proof gallons by volume than they sold. This is common for startup distillers that must produce more spirits in their early years than they can sell in order to age specific products.

A new distiller will often purchase spirits from other producers in the early years for blending and repackaging while it ages spirits that are produced on-site. In 2019, smaller distillers purchased 7% of spirits from businesses outside of Missouri. These sales reflect startup or specialized spirit needs. These smaller distillers generally produce most spirits on-site as consumers enjoy the craft drink experience. Larger distillers, however, may need to purchase spirits from outside of the state to deliver higher volume products. In total, Missouri distillers purchased 21% of spirits from out-of-state sources to cover their production during 2019.

Total number of proof gallons sold by smaller distillers increased each year from 2012 to 2019, and production grew at an average rate of 33% between 2015 and 2018 as new firms started operations. Seven new spirit producers began making sales in 2019 and nearly tripled total proof gallons sold in one year by smaller operations.

Distillers use multiple channels to reach consumers and sell their spirits. On-site sales and off-site sales within Missouri contributed nearly equally to 2019 total revenue for smaller distillers. For larger distillers, out-of-state sales accounted for the majority of proof gallons sold (89%) compared with 15% for smaller producers (see Chart 4).

CHART 4. DESTINATION FOR MISSOURI SPIRITS, 2019

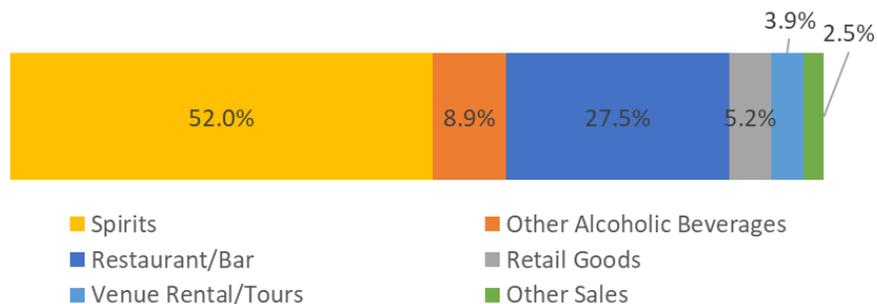


As a distillery increases in size, its markets naturally expand outside of the state. This is a positive trend that brings new money to Missouri's economy. Missouri distillers face obstacles, however, to selling spirits into broader markets. Unlike the state's wineries, Missouri distillers cannot sell spirits directly to consumers online nor ship out of state. Direct-to-consumer sales are an increasingly important channel to reach consumers; the COVID-19 pandemic has demonstrated this. Distillers want to modernize laws to sell online, so they can keep pace with other states (AZ, FL, HI, KY, NE, NH, VA), which allow online sales.

Respondents' 2019 sales included revenue from spirits, restaurants, retail, and other services. Using a combination of survey responses and 2019 excise tax collections from the Missouri Department of Public Safety, Alcohol and Tobacco Control Division, the project team estimates that the state's 50 active distillers—those with known 2019 sales—had total sales of \$367 million in 2019.

Spirits and other alcoholic beverage sales represented the largest contribution to total gross sales (61%). More than one-quarter of dollar sales (27.5%) were from restaurants and bars. Chart 5 provides 2019 averages of total revenue by source of sale for the middle 80% of all responding distillers.

CHART 5. MISSOURI DISTILLER DOLLAR SALES BY SOURCE, 2019



Distillery Visitors & Visitor Economic Impact

Distilleries with tasting rooms, restaurants, and event space provide entertainment and an experience while generating additional consumer spending. The *Missouri Spirits Expedition*, spearheaded by the Missouri Craft Distillers Guild, gives visitors a road map, and an incentive, to tour craft spirit distillers across the state. The Expedition, and other promotional events, highlights how distillers are building their businesses.

Responding distillers estimated they hosted 257,000 visitors in 2019, and total spending per visitor averaged approximately \$28. The Missouri Division of Tourism's most recent visitor profiles estimate that 0.8% of all Missouri travelers visited distillers—roughly 336,000 of 4.2 million visitors. Applying a \$28 expenditure per visitor to all 336,000 visitors results in \$9.4 million in visitor spending for 2019. Forty percent of these dollars came from visitors outside of the state, representing new money in the Missouri economy.

As Missouri distillers increase in size, the survey findings suggest that their tourism market grows as out-of-state travelers become a larger share of total visits. Larger distillers reported a higher percentage of both out-of-state visitors and higher sales per visitor. As startup and smaller distillers increase spirit production, their ability to host and attract visitors is expected to increase.

When asked to project their visitor levels for 2020 and 2021, distillers were optimistic in early 2020 that the number of visitors would increase by 52% (see Table 2). Mature and larger firms offered modest visitor growth projections, but many startup firms and actively growing distillers expected to use the next two years to launch and expand their on-premise visits and sales. About one in four respondents did not currently offer any on-site sales and were not planning to include this capacity within the next two years.

TABLE 2. SURVEY RESPONDENTS' ON-SITE VISITORS

Distiller Size	2019 Total	2020 Expected	2021 Expected
Larger: 10,000 PG or more	132,500	173,800	222,000
Smaller: Less than 10,000 PG	124,456	143,415	167,722
Total	256,956	317,215	389,722

Business Investments

The survey asked distillers about business investments in machinery, equipment, and construction to understand typical startup costs and continuing capital investments for operational businesses. Investments from 2015 to 2019 were analyzed for spending trends to ensure the data reflected timely costs figures.

Initial investments

The investments distillers made in the year they received their DSP licenses and the year after were used to understand machinery, equipment, and construction startup costs. Due to the small number of responding firms and wide range of reported investment figures (from a low of \$10,000 to more than \$2 million), two measures of central tendency were used to analyze the data. Table 3 shows the two-year median and trimmed average investments for Missouri distillers. Based on the trimmed average, two-year startup costs have totaled just more than \$300,000 for typical distillers.

TABLE 3. DISTILLER STARTUP INVESTMENTS

Startup Investments	2-Year Median Cost	2-Year Trim. Avg Cost
Machinery and Equipment	\$152,500	\$168,000
Construction	\$46,000	\$135,200
Total	\$198,500	\$303,200

Annual capital investments

Distillers reported continuing capital investments in machinery, equipment, and construction that spanned from a few thousand to a few million dollars, depending on distillery size, business stage, and other factors. Given the small number of firms and wide investment range, the median and trimmed average analyses were used to describe distillers' typical annual capital spending outside of startup years. Table 4 shows the investments per \$100,000 in gross sales for Missouri distillers between 2015 and 2019. These figures indicate that annual capital investments, apart from startup years, represented 3% to 7% of gross sales.

TABLE 4. DISTILLER ANNUAL CAPITAL INVESTMENTS PER \$100,000 IN GROSS SALES, 2015-2019

Annual Capital Investments	Median Cost Per \$100,000 in Gross Sales	Trim. Avg Cost Per \$100,000 in Gross Sales
Machinery and Equipment	\$1,400	\$4,300
Construction	\$1,300	\$2,400
Total	\$2,700	\$6,700

Labor, Wages, and Benefits

The survey asked distillers about the number of jobs at their businesses from 2017 to 2019 and their 2019 average annual pay. To protect the confidentiality of larger firms, only data for smaller spirit producers can be shown. Smaller distillers in 2019 employed a median of four people, including full- and part-time jobs (see Table 5). These distillers, prior to COVID-19, were planning to double their median employment level to 8.5 by 2021 to match increased spirit production and sales.

TABLE 5. MEDIAN NUMBER OF SMALLER DISTILLER JOBS, 2017-2019

Distiller Description	2017	2018	2019
Smaller: Less than 10,000 PG	3.3	3.5	4.0

Pay for full-time employees at smaller distillers averaged \$42,500 in 2019. By comparison, Missouri's median earnings for full-time, year-round workers in 2018 was \$43,200, based on the latest available data. About half (47%) of all distillers with employees in 2019 offered health insurance.

Insurance, Licenses, and Taxes

Distillers reported a wide range of insurance, license, and tax costs from 2017 to 2019; these costs varied by firm size and business stage. Given this diversity, this report communicates figures as a proportion of annual gross sales from 2017 to 2019 to better understand typical distiller costs. Two measures of central tendency were used: the median and the trimmed average.

Total insurance, license, and tax costs represented 9% to 16% of a distiller's annual gross sales, depending on the measure (See Table 6). The federal excise tax (FET) was the highest expense for larger distillers, and smaller firms incurred higher costs for commercial insurance and sales taxes. The FET temporarily dropped from \$13.50 per proof gallon to \$2.70 for the first 100,000 proof gallons produced in 2018; this change improved taxing parity with wine and beer makers. The lower FET will end on Dec. 31, 2020. A higher tax rate will substantially impact smaller distilleries' cost of doing business.

TABLE 6. INSURANCE, LICENSES, AND TAXES PER \$100,000 IN GROSS SALES (2017-2019)

Insurance, Licenses, and Taxes	Annual Median Cost Per \$100,000 in Gross Sales	Annual Trim. Avg Cost Per \$100,000 in Gross Sales
Commercial insurance	\$2,326	\$5,311
State, local, or other license fees	\$1,558	\$3,881
State and local sales taxes	\$3,276	\$3,730
Local property taxes	\$513	\$919
Federal excise taxes	\$1,607	\$2,536
Total	\$9,280	\$16,377

Adding Value to Agricultural Inputs

Distillers add value to Missouri's economy by offering products made from Missouri ingredients and supporting other Missouri businesses. Smaller distillers have the highest input costs, as a percent of spirit

sales, as they source niche ingredients and operate at lower production levels. Of every \$1 they earn in spirit sales, smaller distillers spend 40% on inputs. Larger distillers spend closer to 30% per \$1 of spirit sales. Smaller distillers pay more for inputs such as corn and other grains. This premium can reflect non-GMO production, special varieties, and special services including delivery, grinding and bagging inputs off-site. Larger distillers can also negotiate lower costs based on volume. Use of corn, fruit, and wood barrels differ by the distillery and its spirit specialties. This survey did not collect inputs data by spirit specialization.

TABLE 7: COMPARING INPUTS BY DISTILLER PRODUCTION SIZE, 2019

Input	Larger: More than 10,000 PG	Smaller: Less than 10,000 PG
Corn	0.8%	8.4%
Other Grain	0.8%	14.6%
Fruits/Vegetables	0.0%	2.1%
Sugar/Molasses	0.7%	5.0%
Yeast/Yeast Nutrients	0.2%	2.0%
Other Distilled Liquors	36.6%	2.8%
Glass Containers	14.2%	17.4%
Wood Barrels	1.4%	15.5%
Packaging	24.3%	6.5%
Distribution	2.8%	3.3%
Marketing	17.1%	17.5%
All Other Inputs	1.2%	5.0%
Total Inputs	100%	100%

Many of these inputs are purchased from other Missouri businesses. Smaller distillers were more likely to purchase inputs from within the state; they made 57% of all purchases from Missouri farms or companies in 2019. Larger distillers purchased 21% of inputs from within the state. As a whole, larger distillers purchase substantially more, and their choice to buy goods and services from Missouri suppliers can support a significant number of jobs and amount of labor income in other industries.

APPENDIX A - SURVEY

BUSINESS PRODUCTION, SALES, AND COST SURVEY QUESTIONS:

All responses will be used to develop statewide estimates of recent sales trends and expectations along with industry averages for economic impact analysis. Please enter zero if there are years the business was not in operation or had no sales or costs.

Business Production

1. What year did the business receive a Distilled Spirits Plant (DSP) permit or is planning to receive a DSP permit?
2. What was the total production size in proof gallons and origin of spirits for the years below?

		Percent from (should total 100%):		
	Total Proof Gallons Produced	On-Site Distillation	Repackaged Other Missouri Spirits	Repackaged Non-Missouri Spirits
2019		%	%	%
2018		%	%	%
2017		%	%	%
2016		%	%	%
2015		%	%	%
2014		%	%	%
2013		%	%	%
2012		%	%	%

3. What is the expected total production size in proof gallons and origin of spirits in the following years (best estimate)?

		Percent from (should total 100%):		
	Total Proof Gallons Produced	On-Site Distillation	Repackaged Other Missouri Spirits	Repackaged Non-Missouri Spirits
2020		%	%	%
2021		%	%	%

Business Investments

4. How much money did the business spend on machinery and equipment or construction/renovations of buildings in the previous years?

	Machinery/Equipment	Construction/Renovations
2019	\$	\$
2018	\$	\$
2017	\$	\$
2016	\$	\$

2015	\$	\$
2014	\$	\$
2013	\$	\$
2012	\$	\$

5. How much money does the business plan to spend on additional machinery and equipment or construction/renovations of buildings in the coming years (best estimate)?

	Machinery/Equipment	Construction/Renovations
2020	\$	\$
2021	\$	\$

Business Sales

6. Which business stage best describes this company based on the definitions below?

- Development (planning only, no sales)
- Start Up (initial sales, no profit yet)
- Growth (sales increasing, low profit, investing focus)
- Mature (stable sales/profit, new products/markets focus)
- Decline/Exited (profits low and declining, unstable cash flow)

7. What were the total gross sales or receipts for this business in the years below?

2019	\$
2018	\$
2017	\$
2016	\$
2015	\$
2014	\$
2013	\$
2012	\$

8. What is the expected total gross sales or receipts for this business in the following years (best estimate)?

2020	\$
2021	\$

9. What percent of total gross sales or receipts for this business in 2019 was (answers should total 100%):

On-Site Sales	%
Off-Site but in Missouri Sales	%
Other State Sales	%
Foreign Country Sales	%
	100%

10. What percent of total gross sales or receipts for this business in 2019 was from (answers should total 100%):

Spirits	%
Other Alcoholic Beverages	%
Restaurant/Bar	%
Retail Goods	%
Venue Rental/Tours	%
Other Sales (Please Describe)	%
Other Sales (Please Describe)	%
	100%

11. What percent of spirit sales in 2019 were sold to other Missouri or Non-Missouri brands?

Other Missouri Brands	%
Non-Missouri Brands	%

12. How many proof gallons were sold in the years below?

2019	
2018	
2017	
2016	
2015	
2014	
2013	
2012	

13. How many proof gallons are expected to be sold in the following years (best estimate)?

2020	
2021	

If the business has on-site sales at any location, please answer these next questions. If no on-site sales, then skip to question 18.

14. How many total visitors did the business have in 2019 (best estimate)?

15. How many visitors are expected in the following years (best estimate)?

2020	
2021	

16. What percent of visitors came from outside Missouri (to include foreign visitors) in 2019 (best estimate)?

17. What was the average per visitor purchase amount in 2019 (best estimate of total visitor purchases divided by number of visitors)?

Business Labor Cost and Purchasing Patterns

18. How many full-time jobs (35- to 40-hour week) did the business average per month, including regular and seasonal employees, in the previous years?

2019	
2018	
2017	

19. How many full-time jobs (35- to 40-hour week) does the business plan on average per month, including regular and seasonal employees, in the coming years (best estimate)?

2020	
2021	

20. How many part-time jobs (20-hour week) did the business average per month, including regular and seasonal employees, in the previous years?

2019	
2018	
2017	

21. How many part-time jobs (20-hour week) does the business plan on average per month, including regular and seasonal employees, in the coming years (best estimate)?

2020	
2021	

22. Describe the business's full-time average annual pay in 2019 (add the annual wage of each employee and divide by total employees, e.g. for two employees: $\$30,000 + \$40,000 / 2 = \$35,000$):

23. Describe the business's part-time average hourly pay in 2019 (add the hourly wage of each employee and divide by total employees, e.g. for two employees: $\$15 + \$21 / 2 = \$18$):

24. Did the business pay full-time employee health insurance or other benefits in 2019? (check all that apply)

- Health Insurance
- Retirement Contribution
- Other benefits

If other benefits, please explain:

25. How much did the business pay in commercial insurance (across all policies) in the previous years?

2019	\$
2018	\$

2017	\$
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26. How much did the business pay in license fees (local, state, other) in the previous years?

2019	\$
2018	\$
2017	\$

27. How much did the business pay in state/local sales taxes in the previous years?

2019	\$
2018	\$
2017	\$

28. How much did the business pay in local property taxes in the previous years?

2019	\$
2018	\$
2017	\$

29. How much did the business pay in federal excise taxes (FET) in the previous years?

2019	\$
2018	\$
2017	\$

30. How much did the business pay for the following inputs in 2019?

Corn	\$
Other Grain	\$
Fruits/Vegetables	\$
Sugar/Molasses	\$
Yeast and Yeast Nutrients	\$
Other Distilled Liquors	\$
Glass Containers	\$
Wood Barrels	\$
Packaging	\$
Distribution	\$
Marketing (all promotion and advertising)	\$
All Other Inputs	\$

31. What percentage of these products or services were bought from in-state producers during 2019 (best estimate)?

	Percent from in-state producers?
Corn	%
Other Grain	%
Fruits/Vegetables	%
Sugar/Molasses	%
Yeast and Yeast Nutrients	%
Other Distilled Liquors	%
Glass Containers	%
Wood Barrels	%
Packaging	%
Distribution	%
Marketing (all promotion and advertising)	%

Thank you for responding to this important survey!

ⁱ A summary of the economic contribution analysis can be accessed at https://extensiondata.missouri.edu/Pro/ExCEED/Docs/MissouriDistiller_ImpactBrief_April_2020.pdf

ⁱⁱ Howell, C. (2010). Statistical Methods for Psychology, Seventh Edition. Cengage Wadsworth, CA. Accessed at <https://labs.la.utexas.edu/gjiden/files/2016/05/Statistics-Text.pdf>