

August 2022

Labor Market Analysis

Viticulture and Enology



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Prepared by the Central Valley/Mother Lode Center of Excellence

COVID-19 Statement: This report includes employment projection data by Emsi. Emsi's projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy during the projection period will be at approximately full employment or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

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Summary

Please note the COVID-19 statement on page 2 when considering this report's findings.

This study conducted by the Central Valley/Mother Lode Center of Excellence examines labor market demand, wages, skills, and postsecondary supply for Viticulture and Enology. Three occupations related to Viticulture and Enology were identified for Madera College:

- 11-9010, Farmers, Ranchers, and Other Agricultural Managers
- 19-4010, Agricultural and Food Science Technicians
- 45-1010, First-Line Supervisors of Farming, Fishing, and Forestry Workers

Key findings:

- **Occupational demand** — Nearly 23,500 workers were employed in jobs related to Viticulture and Enology in 2020 in the South Central Valley/Southern Mother Lode (SCV/SML) subregion. The largest occupation is farmers, ranchers, and other agricultural managers with 19,003 workers, and it is expected to contract by 1% over the next five years, while still having 1,938 annual openings.
- **Wages** — Agricultural and food science technicians earn the highest entry-level wage, \$15.27/hour in the subregion.
- **Employers** — Employers with the most job postings in the subregion are California Public Utilities Commission, state of California, and Fieldin.
- **Occupational titles** — The most common occupational title in job postings in the subregion is Agricultural Technicians. The most common job title is Agricultural Technician I Seasonal.
- **Skills and certifications** — The top baseline skill is communication skills, the top specialized skill is repair, and the top software skill is Microsoft Office. The most in-demand certification is a applicators license.
- **Education** — There was no education data available for the three occupations related to Viticulture and Enology.
- **Supply** — Analysis of postsecondary completions shows that on average 1 awards were conferred in the Central Valley/Mother Lode region each year.

Based on a comparison of occupational demand and supply, there is an undersupply of 2,796 trained workers in the subregion and 3,979 workers in the region. The Center of Excellence recommends that Madera College work with the regional directors, the college's advisory board, and local industry in the development of programs to address the shortage of Viticulture and Enology workers in the region.

Introduction

The Central Valley/Mother Lode Center of Excellence was asked by Madera College to provide labor market information for Viticulture and Enology. The geographical focus for this report is the South Central Valley/Southern Mother Lode (SCV/SML) subregion, but regional demand and supply data has been included for broader applicability and use. The average living wage for a single adult in the SCV/SML subregion is \$11.91/hour.¹ Analysis of the program and occupational data related to Viticulture and Enology resulted in the identification of applicable occupations. The Standard Occupational Classification (SOC) System codes and titles used in this report are:

- 11-9010, Farmers, Ranchers, and Other Agricultural Managers
- 19-4010, Agricultural and Food Science Technicians
- 45-1010, First-Line Supervisors of Farming, Fishing, and Forestry Workers

The occupational titles, job descriptions, sample job titles, and knowledge and skills from the Bureau of Labor Statistics and O*NET OnLine are shown below. There was no O*Net data available for agricultural and food science technicians.

Farmers, Ranchers, and Other Agricultural Managers

Job Description: Plan, direct, or coordinate the management or operation of farms, ranches, greenhouses, aquacultural operations, nurseries, timber tracts, or other agricultural establishments. May hire, train, and supervise farm workers or contract for services to carry out the day-to-day activities of the managed operation. May engage in or supervise planting, cultivating, harvesting, and financial and marketing activities.

Knowledge: Administration and Management, Production and Processing, Biology, Mathematics, English Language

Skills: Critical Thinking, Speaking, Monitoring, Judgment and Decision Making, Time Management

First-Line Supervisors of Farming, Fishing, and Forestry Workers

Job Description: Directly supervise and coordinate the activities of agricultural, forestry, aquacultural, and related workers.

Knowledge: Administration and Management, Production and Processing, Customer and Personal Service, English Language, Mechanical

Skills: Coordination, Critical Thinking, Monitoring, Speaking, Management of Personnel Resources

Occupational Demand

The SCV/SML subregion employed 23,488 workers in Viticulture and Enology occupations in 2021 (Exhibit 1). The largest occupation is farmers, ranchers, and other agricultural managers with 19,003 workers. This occupation is expected to contract by 1% over the next five years and has the greatest number of projected annual openings, 1,938.

¹ The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

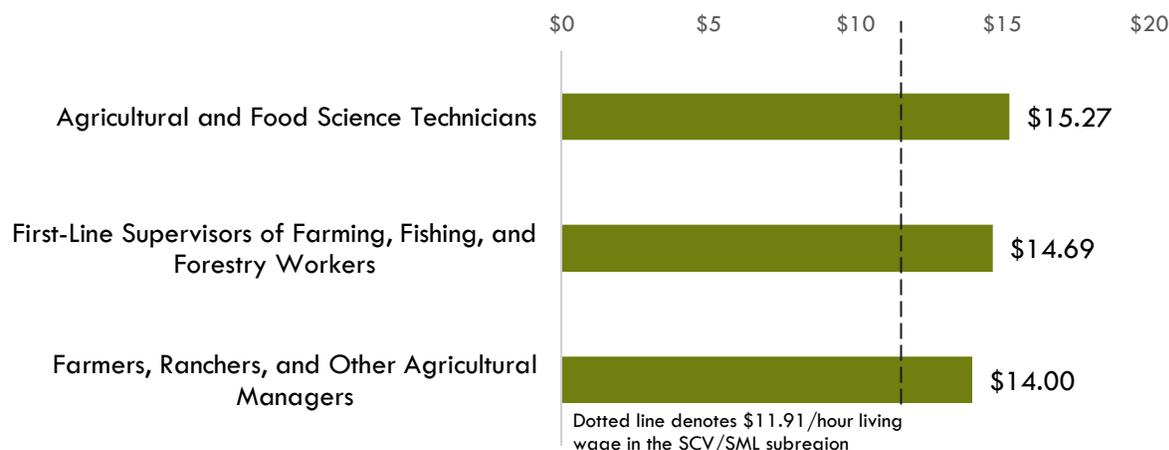
Exhibit 1. Viticulture and Enology employment and occupational projections in the SCV/SML subregion

Occupation	2021 Jobs	2026 Jobs	5-Year Change	5-Year % Change	Annual Openings
Farmers, Ranchers, and Other Agricultural Managers	19,003	18,746	(258)	(1%)	1,938
First-Line Supervisors of Farming, Fishing, and Forestry Workers	3,867	4,452	585	15%	745
Agricultural and Food Science Technicians	618	727	110	18%	114
TOTAL	23,488	23,925	437	2%	2,797

Wages

Exhibit 2 shows the entry-level hourly wages of the Viticulture and Enology occupations. Agricultural and food science technicians earn the highest entry-level wage, \$15.27/hour in the subregion².

Exhibit 2. Viticulture and Enology entry-level wages in the SCV/SML subregion



Job Postings

There were 113 job postings for the three occupations in the SCV/SML subregion from February 2022 to July 2022.³ The employers with the most job postings are listed in Exhibit 3.

² Entry-level wages are derived from the 25th percentile.

³ Other than occupation titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

Exhibit 3. Top employers of Viticulture and Enology by number of job postings

Employer	Job Postings	% Job Postings
California Public Utilities Commission	5	6%
State of California	5	6%
Fieldin	3	3%
Fresno's Chaffee Zoo	3	3%
Fresno's Chaffee Zoo Corp	3	3%
Grimmway Enterprises Incorporated	3	3%
420 Kingdom	2	2%
Cooperative Agricultural Support Services Authority	2	2%
Dellavalle Laboratory Incorporated	2	2%
Fresno Mosquito and Vector Control District	2	2%

Exhibit 4 shows how job postings for the targeted occupations in the SCV/SML subregion are distributed across eight O*NET OnLine occupations. The occupational title Agricultural Technicians is listed in 42 job postings. Note how this occupational title dominates the job posting results. Common job titles in postings include Agricultural Technician I Seasonal in seven job postings, Fish And Wildlife Technician in six job postings, and Farm Manager in five job postings.

Exhibit 4. Top occupational titles in job postings for Viticulture and Enology

Occupational Title	Job Postings	% of Job Postings
Agricultural Technicians	42	37%
Farm and Ranch Managers	27	24%
Aquacultural Managers	12	11%
Nursery and Greenhouse Managers	12	11%
Food Science Technicians	10	9%
First-Line Supervisors of Agricultural Crop and Horticultural Workers	6	5%
First-Line Supervisors of Animal Husbandry and Animal Care Workers	3	3%
First-Line Supervisors of Logging Workers	1	1%

Salaries

Exhibit 5 shows the “Market Salaries” for Viticulture and Enology occupations. These are calculated by Burning Glass using a machine learning model built off of millions of job postings every year. This accounts for adjustments based on locations, industry, skills, experience, education requirements, among other variables.

Exhibit 5. Salaries for Viticulture and Enology occupations

Market Salary Percentile	Salary Amount
10th Percentile	\$27,770
25th Percentile	\$30,621
50th Percentile	\$36,932
75th Percentile	\$49,331
90th Percentile	\$58,952

Education

Of the 113 job postings, 64 listed an education level preferred for the positions being filled. Among those, 50% requested high school or vocational training, 50% requested a bachelor’s degree and 9% requested an associate degree (Exhibit 6). A job posting can indicate more than one education level. Hence, the percentages shown in the chart below may total more than 100%.

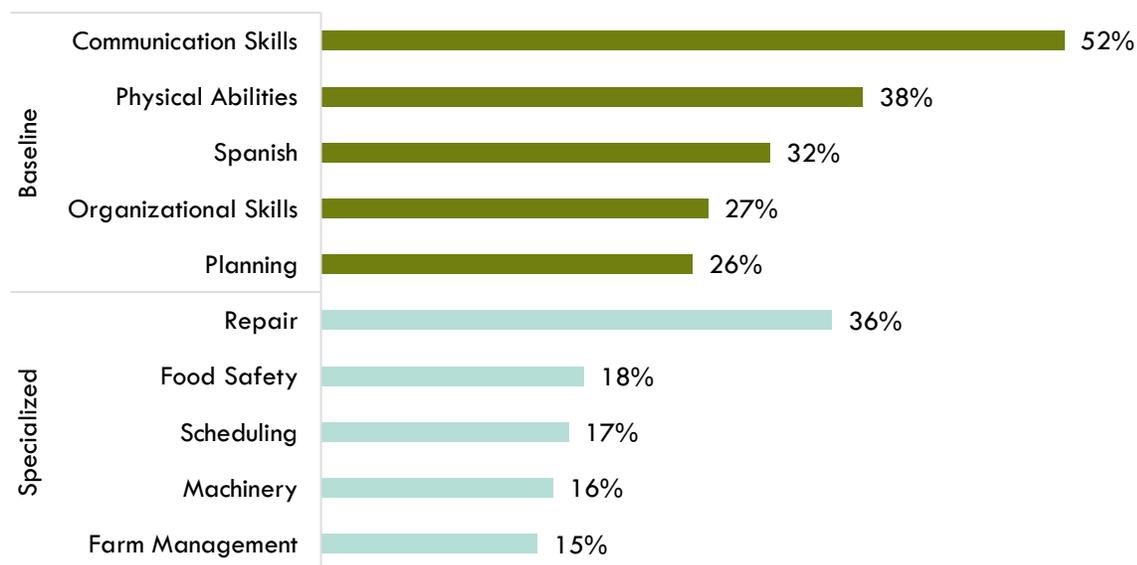
Exhibit 6. Education levels requested in job postings for Viticulture and Enology

Education Level	Job Postings	% of Job Postings
High school or vocational training	32	50%
Bachelor's degree	32	50%
Associate's degree	6	9%
Doctoral degree	2	3%

Baseline and Specialized Skills

Exhibit 7 depicts the top baseline and specialized skills for the targeted occupations. The three most important baseline skills are communication skills, 52% of job postings, physical abilities, 38%, and Spanish, 32%. The top three specialized skills are repair, 36% of job postings, food safety, 18%, and scheduling, 17%.

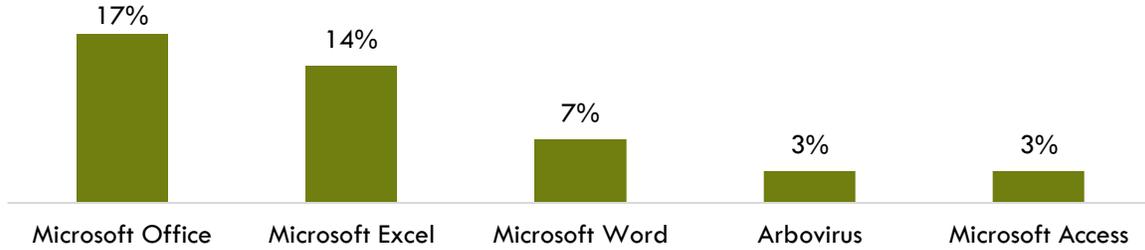
Exhibit 7. In-demand Viticulture and Enology baseline and specialized skills



Software Skills

Analysis also included the software skills most in demand by employers. Microsoft Office and Excel were the top two software skills identified in job postings (Exhibit 8).

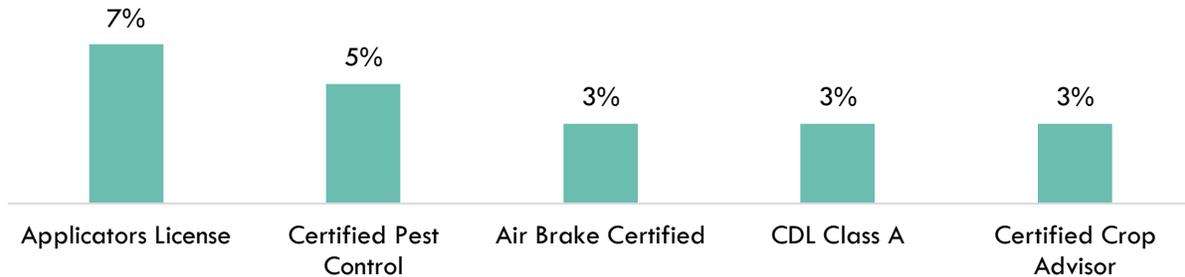
Exhibit 8. In-demand Viticulture and Enology software skills



Certifications

Of the 113 job postings, 59 contained certification data. Among those, 7% indicated a need for an applicators license. The next top certifications are a certified pest control and air brake certified (Exhibit 9). Please note 92% of job postings indicated a need for a driver’s license but it is not a certificate.

Exhibit 9. Top Viticulture and Enology certifications requested in job postings



Education, Work Experience & Training

There was no education data available for the three occupations related to Viticulture and Enology (Exhibit 10).

Exhibit 10. Education, work experience, training, and Current Population Survey results for Viticulture and Enology occupations⁴

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Farmers, Ranchers, and Other Agricultural Managers	N/A	None	N/A	30.2%
First-Line Supervisors of Farming, Fishing, and Forestry Workers	N/A	None	N/A	21.9%
Agricultural and Food Science Technicians	N/A	None	N/A	40.5%

⁴ “Labor Force Statistics from the Current Population Survey,” Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

Supply

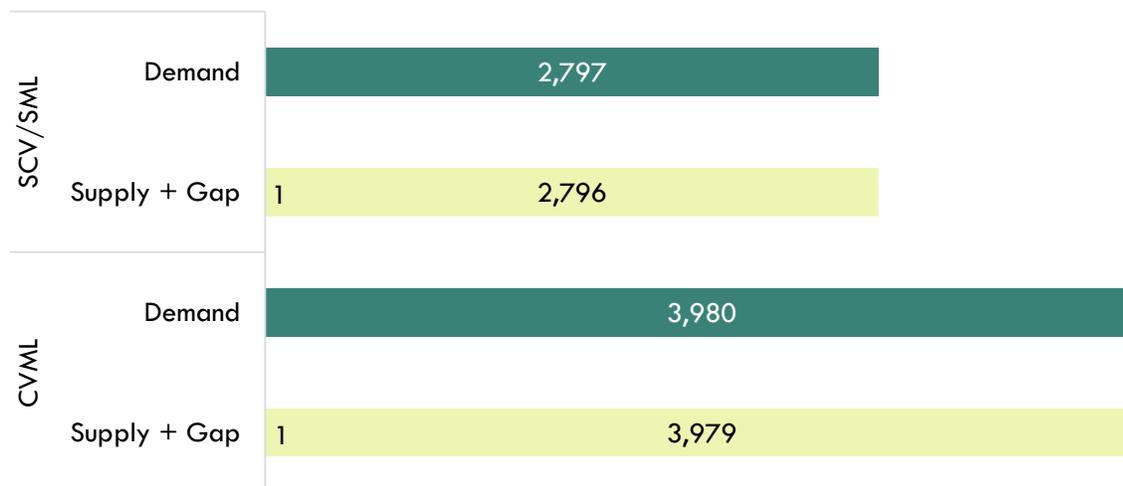
Analysis of program data from the Integrated Postsecondary Education Data System (IPEDS) included the TOP code and title: 010400 - Viticulture, Enology, and Wine Business. Analysis of the last three years of data shows that, on average, 1 award was conferred in the Central Valley/Mother Lode region each year (Exhibit 11).

Exhibit 11. Postsecondary supply for Viticulture and Enology occupations in the region

TOP/ CIP Code- Title	College	Certificate 16 < 30 Semester Units	Subtotal
010400 - Viticulture, Enology, and Wine Business	Reedley College	1	1
TOTAL		1	1

There is an undersupply of 2,796 Viticulture and Enology workers in the SCV/SML subregion and 3,979 workers in the region (Exhibit 12).

Exhibit 12. Viticulture and Enology workforce demand (annual job openings), postsecondary supply of students (awards), and additional students needed to fill gap in the SCV/SML subregion and region



Student Outcomes

There was no available employment and wage outcomes from the California Community College Chancellor's Cal-PASS Plus LaunchBoard for the TOP code related to Viticulture and Enology.

Conclusion

The entry-level wages of the three occupations exceed the SCV/SML subregion's average living wage. There were 113 job postings in the past six months for occupations related to Viticulture and Enology in the subregion. Analysis of skills and certification requirements in job postings indicates:

- The top baseline skill is communication skills, and the top specialized skill is repair.
- The top software skill is Microsoft Office.
- The top certification is a applicators license.

There is an undersupply of trained workers, a shortage of 2,796 in the SCV/SML subregion and 3,979 in the region.

Recommendation

Based on these findings, it is recommended that Madera College work with the regional directors, the college's advisory board, and local industry in the development of programs to address the shortage of Viticulture and Enology workers in the region.

Appendix A: Methodology & Data Sources

Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor’s Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (EMSI). EMSI occupational employment data are based on final EMSI industry data and final EMSI staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level EMSI earnings by industry: economicmodeling.com .
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: https://www.bls.gov/emp/tables/educational-attainment.htm .
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: labormarketinfo.edd.ca.gov .
Job Posting and Skills Data	Burning Glass: burning-glass.com/ .
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 occupations as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: onetonline.org .

Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Education Attainment Level: The highest education attainment level of workers age 25 years or older.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (EMSI) formula that includes historical employment and economic indicators along with national, state and local trends.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.