

Labor Market Analysis for Program Recommendation:  
 0104.00/Viticulture, Enology, and Wine Business  
 (Certificate and/or Associate – starting with non-credit)  
 CVML Center of Excellence, March 2026



Summary

|                         |  |  |   |
|-------------------------|--|--|---|
| Program LMI Endorsement | Endorsed: All LMI Criteria Met <input checked="" type="checkbox"/> | Endorsed: Some LMI Criteria Met <input type="checkbox"/> | Not LMI Endorsed <input type="checkbox"/> |
|-------------------------|--|--|---|

Program LMI Endorsement Criteria

|                                   | Yes <input checked="" type="checkbox"/>   | No <input type="checkbox"/> |
|-----------------------------------|---|-----------------------------|
| Supply Gap:                       | <p><b>Comments:</b> There are projected to be <b>174 annual job openings</b> throughout the SCV/SML subregion for <i>agricultural and food science technicians</i>-related middle-skill occupations, which <b>are more than the 0 awards conferred by educational institutions in the SCV/SML subregion.</b></p> <p><b>Note:</b> Only middle-skill jobs are considered when determining supply gap. Including the below and above middle-skill jobs increases the overall annual job openings by 324 to a total of 498.</p> |                             |
| Living Wage: (Entry-Level, 25th): | <p><b>Comments:</b> Both <i>agricultural and food science technicians</i>-related middle-skill occupations included in this report have an entry-level hourly wage <b>above the SCV/SML living wage of \$16.08.</b></p> <p><b>Note:</b> Only middle-skill jobs are considered when determining living wage.</p>   |                             |
| Education:                        | <p><b>Comments:</b> The typical entry-level education for <i>agricultural and food science technicians</i>-related middle-skill occupations is an associate degree. Additionally, <b>41% have completed some college or an associate degree as their highest level of education.</b></p> <p><b>Note:</b> Only middle-skill jobs are considered when determining education.</p>  |                             |

Emerging Occupations(s)

|                              |  |
|------------------------------|--|
| Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
| Comments: N/A                |  |

The Central Valley/Mother Lode Center of Excellence for Labor Market Research (CVML COE) prepared this report to determine whether there is a supply gap in the South Central Valley/Southern Mother Lode regional labor market related to the following occupations:

- Below Middle-Skill - denoted with a caret (^) throughout this report
  - Food Batchmakers (51-3092)^
  - Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders (51-9012)^
- Middle-Skill
  - Agricultural Technicians (19-4012)

- Food Science Technicians (19-4013)
- Above Middle-Skill - denoted with a caret (^) throughout this report
  - Food Scientists and Technologists (19-1012)^

Middle-skill occupations typically require a community college education while above middle-skill occupations typically require at least a bachelor's degree.

Based on the available data, there appears to be a supply gap for *agricultural and food science technicians*-related middle-skill occupations. In addition to both occupations in this report having entry-level wages above the subregion's living wage, 41% of middle-skill workers in this field have completed some college or an associate degree as their highest level of education. **Therefore, due to all of the regional labor market criteria being met, the COE endorses this proposed program.**

Exhibit 1 lists the occupational demand, supply, typical entry-level education, and educational attainment for *agricultural and food science technicians*-related occupations.

### Exhibit 1: Labor Market Endorsement Summary

| Occupation (SOC)   | Demand (Annual Openings)     | Supply (CC and Non-CC)   | Entry-Level Hourly Earnings (25th Percentile) | Typical Entry-Level Education     | Community College Educational Attainment |
|--|------------------------------|--------------------------|---|-----------------------------------|--|
| Food Batchmakers (51-3092)v  | NCV/NML: 145<br>SCV/SML: 167 |                          | NCV/NML: \$16.91<br>SCV/SML: \$16.51          | High school diploma or equivalent | 32%                                      |
| Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders (51-9012)v | NCV/NML: 135<br>SCV/SML: 135 | NCV/NML: 0<br>SCV/SML: 0 | NCV/NML: \$21.59<br>SCV/SML: \$18.76          | High school diploma or equivalent | 36%                                      |
| <b>Below Middle-Skill Total</b>  | <b>583</b>                   | <b>0</b>                 | <b>-</b>                                      | <b>-</b>                          | <b>-</b>                                 |
| Agricultural Technicians (19-4012)   | NCV/NML: 41<br>SCV/SML: 72   | NCV/NML: 0               | NCV/NML: \$19.49<br>SCV/SML: \$18.92          | Associate degree                  | 41%                                      |
| Food Science Technicians (19-4013)   | NCV/NML: 92<br>SCV/SML: 102  | SCV/SML: 0               | NCV/NML: \$21.41<br>SCV/SML: \$18.02          | Associate degree                  | 41%                                      |
| <b>Middle-Skill Total</b>  | <b>308</b>                   | <b>0</b>                 | <b>-</b>                                      | <b>-</b>                          | <b>-</b>                                 |

| Occupation (SOC)   | Demand (Annual Openings)   | Supply (CC and Non-CC)   | Entry-Level Hourly Earnings (25th Percentile) | Typical Entry-Level Education | Community College Educational Attainment |
|--|----------------------------|--------------------------|---|-------------------------------|--|
| Food Scientists and Technologists (19-1012) <sup>^</sup> | NCV/NML: 16<br>SCV/SML: 22 | NCV/NML: 0<br>SCV/SML: 0 | NCV/NML: \$30.16<br>SCV/SML: \$26.23          | Bachelor's degree             | 0%                                       |
| <b>Above Middle-Skill Total</b>                          | <b>37</b>                  | <b>0</b>                 | -   | -                             | -  |
| <b>Total</b>   | <b>928</b>                 |                          | -   | -                             | -  |

**Demand:**

- The number of jobs related to the five *agricultural and food science technicians*-related middle-skill occupations in this report are projected to decrease 3% through 2029. There will be 174 annual job openings in the SCV/SML subregion.
- All five *agricultural and food science technicians*-related occupations have an entry-level hourly wage above the living wage of \$16.08 in the SCV/SML subregion.
- There were 210 online job postings for *agricultural and food science technicians*-related occupations over the past 12 months.
- The Bureau of Labor Statistics (BLS) lists an associate degree as the typical entry-level education for two out of the five *agricultural and food science technicians*-related occupations: *Agricultural Technicians*; and *Food Science Technicians*. The occupation *Food Batchmakers*<sup>v</sup>; and *Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders*<sup>v</sup> typically have a high school diploma or equivalent.
- National-level educational attainment data indicates 41% of middle-skill workers in the field have completed some college or an associate degree as their highest level of education.

**Supply:**

- Between 2022 and 2025, there was an average of 0 awards conferred by community colleges in the SCV/SML subregion.
- Between 2021 and 2024, there were no non-community college institutions in the SCV/SML subregion that conferred awards in relevant programs.

# Demand

## Occupational Projections

Exhibit 2a shows the annual percent change in below middle-skill jobs for the two *Production Occupations* from 2019 through 2029. The SCV/SML subregion experienced the highest growth in 2024 at 6%, compared to the 1% growth across all CA occupations.

### Exhibit 2a (Below Middle-Skill) Annual Percent Change in Jobs for Production Occupations, 2019-2029

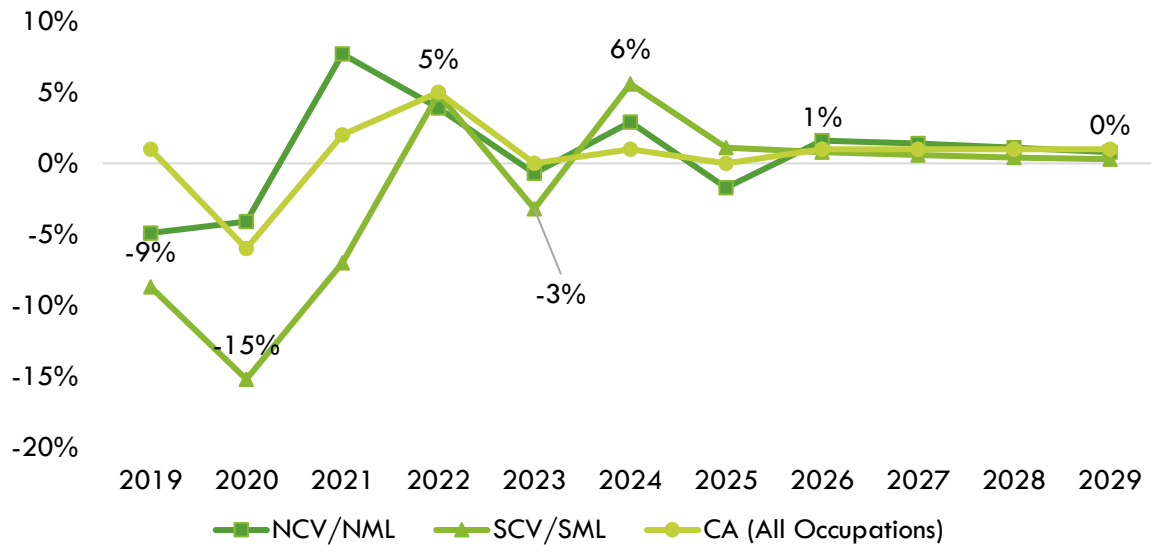


Exhibit 2b shows the annual percent change in middle-skill jobs for the two *Agricultural and Food Science Technicians* from 2019 through 2029. The SCV/SML subregion experienced the highest growth in 2021 at 31%, compared to the 2% growth across all CA occupations.

### Exhibit 2b (Middle-Skill) Annual Percent Change in Jobs for Agricultural and Food Science Technicians, 2019-2029

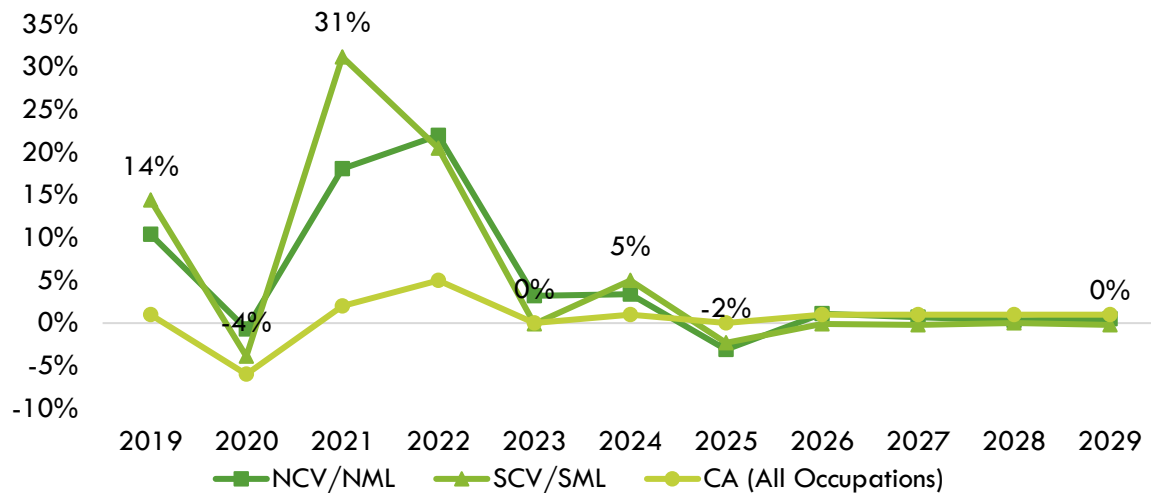


Exhibit 2C shows the annual percent change in above middle-skill jobs for *Food Scientists and Technologists* from 2019 through 2029. The SCV/SML subregion experienced the highest growth in 2021 at 16%, compared to the 2% growth across all CA occupations.

### Exhibit 2c (Above Middle-Skill) Annual Percent Change in Jobs for Food Scientists and Technologists, 2019-2029

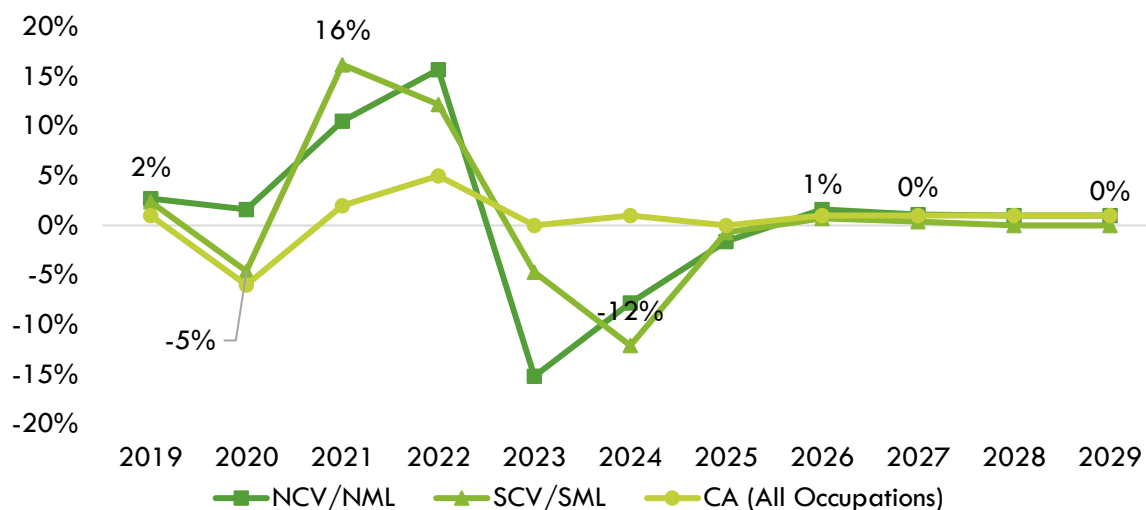


Exhibit 3a shows the five-year occupational demand projections for Below Middle-Skill the five *agricultural and food science technicians*-related occupations. In the SCV/SML subregion, the number of jobs related to these occupations are projected to increase by 3% through 2029. There are projected to be 303 jobs available annually in the SCV/SML subregion.

### Exhibit 3a (Below Middle-Skill): Occupational Demand in NCV/NML, SCV/SML, and CVML<sup>1</sup>

| Geography   | 2024 Jobs    | 2029 Jobs    | 2024-2029 Change | 2024-2029 % Change | Annual Openings |
|-------------|--------------|--------------|------------------|--------------------|-----------------|
| NCV/NML     | 2,151        | 2,222        | 71               | 3%                 | 280             |
| SCV/SML     | 2,321        | 2,396        | 75               | 3%                 | 303             |
| <b>CVML</b> | <b>4,472</b> | <b>4,618</b> | <b>146</b>       | <b>3%</b>          | <b>583</b>      |

<sup>1</sup>Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Exhibit 3b shows the five-year occupational demand projections for Middle-Skill the five *agricultural and food science technicians*-related occupations. In the SCV/SML subregion, the number of jobs related to these occupations are projected to decrease by 3% through 2029. There are projected to be 174 jobs available annually in the SCV/SML subregion.

### Exhibit 3b (Middle-Skill): Occupational Demand in NCV/NML, SCV/SML, and CVML

| Geography   | 2024 Jobs    | 2029 Jobs    | 2024-2029 Change | 2024-2029 % Change | Annual Openings |
|-------------|--------------|--------------|------------------|--------------------|-----------------|
| NCV/NML     | 875          | 870          | (5)              | (1%)               | 133             |
| SCV/SML     | 1,174        | 1,142        | (32)             | (3%)               | 174             |
| <b>CVML</b> | <b>2,049</b> | <b>2,012</b> | <b>(37)</b>      | <b>(2%)</b>        | <b>307</b>      |

Exhibit 3c shows the five-year occupational demand projections for Above Middle-Skill the five *agricultural and food science technicians*-related occupations. In the SCV/SML subregion, the number of jobs related to these occupations are projected to increase by 0% through 2029. There are projected to be 22 jobs available annually in the SCV/SML subregion.

### Exhibit 3c (Above Middle-Skill): Occupational Demand in NCV/NML, SCV/SML, and CVML

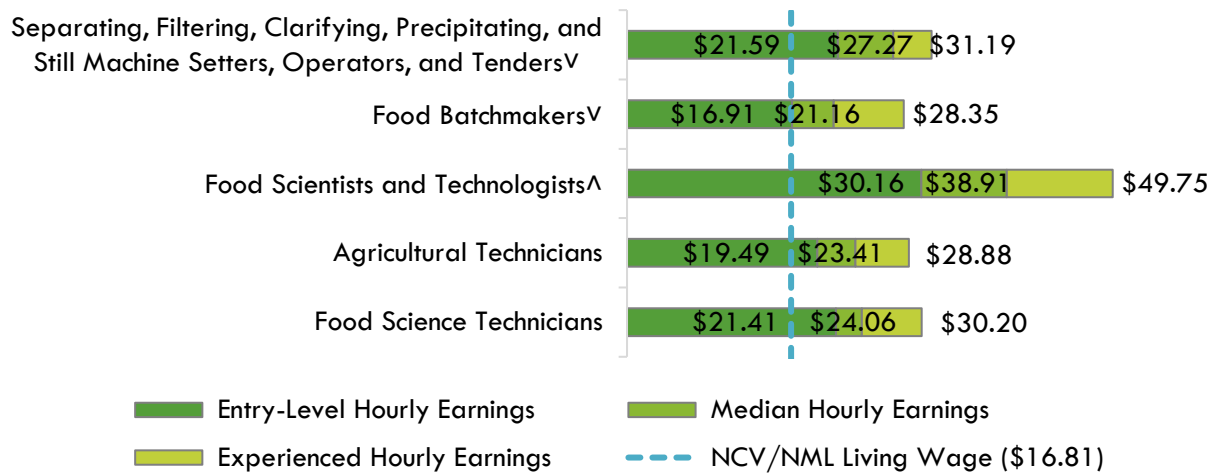
| Geography   | 2024 Jobs  | 2029 Jobs  | 2024-2029 Change | 2024-2029 % Change | Annual Openings |
|-------------|------------|------------|------------------|--------------------|-----------------|
| NCV/NML     | 190        | 196        | 6                | 3%                 | 16              |
| SCV/SML     | 270        | 271        | 1                | 0%                 | 22              |
| <b>CVML</b> | <b>460</b> | <b>467</b> | <b>7</b>         | <b>2%</b>          | <b>38</b>       |

## Wages:

The labor market endorsement in this report considers the entry-level hourly wages for the five *agricultural and food science technicians*-related occupations as they relate to the subregions and region's living wage. NCV/NML, SCV/SML, and CVML wages are included below to provide a complete analysis of the region.

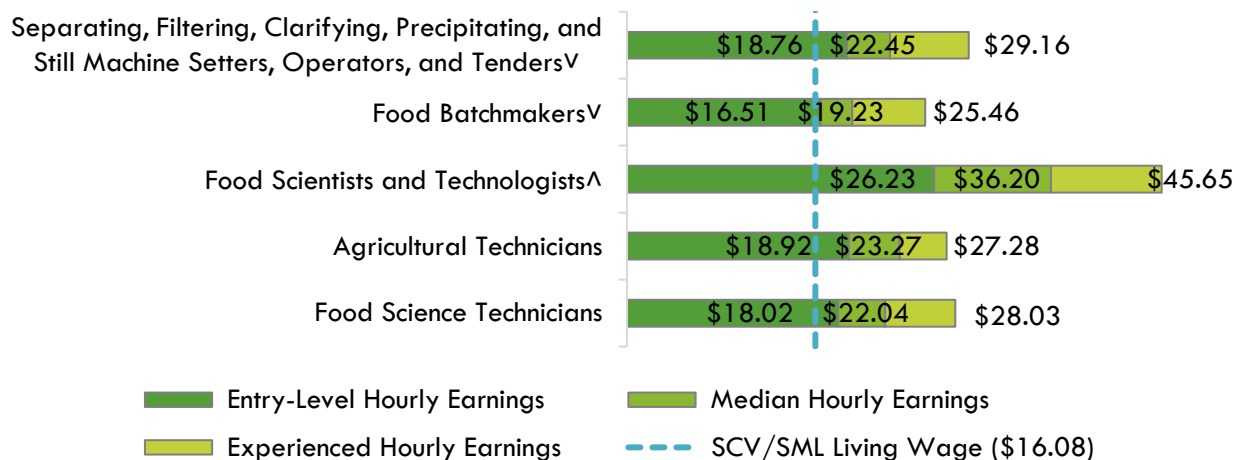
All five *agricultural and food science technicians*-related occupations have an entry-level hourly wage above the living wage for one adult in the NCV/NML subregion (\$16.81). The NCV/NML subregion average wage for these occupations is \$26.90, which is below the average statewide wage of \$27.05. Exhibit 4a shows the wage range for *agricultural and food science technicians*-related occupations and how they compare to the NCV/NML subregion's living wage.

### Exhibit 4a: Wages by Occupation in NCV/NML



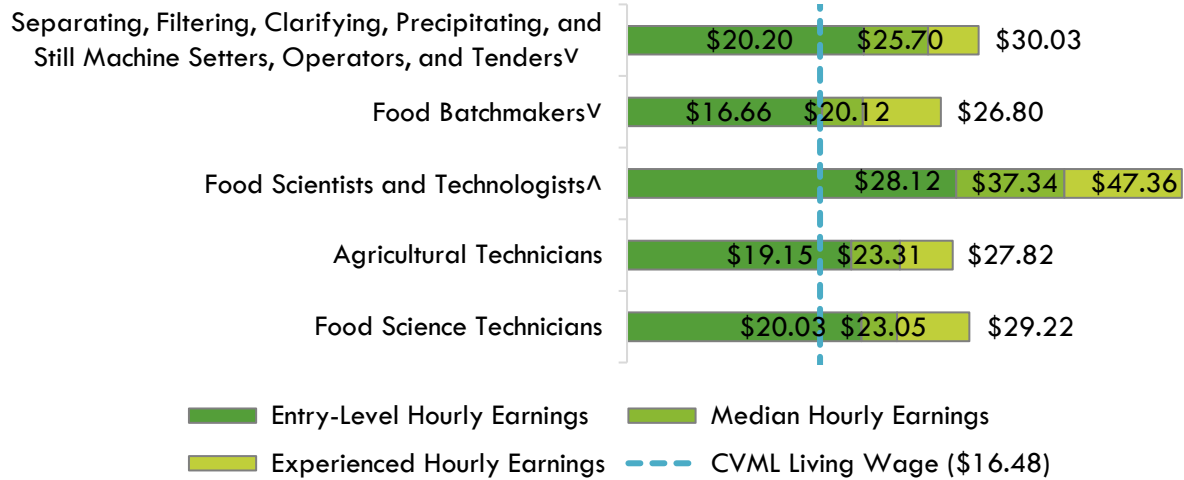
All five *agricultural and food science technicians*-related occupations have an entry-level hourly wage above the living wage for one adult in the SCV/SML subregion (\$16.08). The SCV/SML subregion average wage for these occupations is \$25.00, which is below the average statewide wage of \$27.05. Exhibit 4b shows the wage range for *agricultural and food science technicians*-related occupations and how they compare to the SCV/SML subregion's living wage.

### Exhibit 4b: Wages by Occupation in SCV/SML



All five *agricultural and food science technicians*-related occupations have an entry-level hourly wage above the living wage for one adult in the CVML region (\$16.48). The CVML region average wage for these occupations is \$25.88, which is below the average statewide wage of \$27.05. Exhibit 5 shows the wage range for *agricultural and food science technicians*-related occupations and how they compare to the CVML region's living wage.

### Exhibit 5: Wages by Occupation in CVML



## Job Postings:

**Important Online Job Postings Data Note:** Online job postings data is sourced from Lightcast, a labor market analytics firm that scrapes, collects, and organizes data from online job boards such as LinkedIn, Indeed, Glassdoor, Monster, GovernmentJobs.com, and thousands more. Lightcast uses natural language processing (NLP) to determine the related company, industry, occupation, and other information for each job posting. However, NLP has limitations that include understanding contextual words of phrases; determining differences in words that can be used as nouns, verbs, and/or adjectives; and misspellings or grammatical errors.<sup>2</sup> For these reasons, job postings could be assigned to the wrong employer, industry, or occupation within Lightcast's database.

Additionally, there are several limitations when analyzing job postings. A single job posting may not represent a single job opening, as employers may be creating a pool of candidates for future openings or hiring for multiple positions with a single posting. Additionally, not all jobs are posted online, and jobs may be filled through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels.

There were 6a online job postings related to *Production Occupations* listed in the past 12 months (Exhibit 6a).

### Exhibit 6a (Below Middle-Skill) : Number of Job Postings (n=6)

| Occupations   | Job Postings | Percentage of Job Postings |
|---|--------------|----------------------------|
| Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders | 5            | 83%                        |
| Food Batchmakers  | 1            | 17%                        |

There were 210 online job postings related to *Agricultural and Food Science Technicians* listed in the past 12 months (Exhibit 6b).

### Exhibit 6b (Middle-Skill) : Number of Job Postings (n=210)

| Occupations              | Job Postings | Percentage of Job Postings |
|--------------------------|--------------|----------------------------|
| Agricultural Technicians | 200          | 95%                        |
| Food Science Technicians | 10           | 5%                         |

There were 65 online job postings related to *Food Scientists and Technologists* listed in the past 12 months (Exhibit 6c).

### Exhibit 6c (Above Middle-Skill) : Number of Job Postings (n=65)

| Occupations                       | Job Postings | Percentage of Job Postings |
|-----------------------------------|--------------|----------------------------|
| Food Scientists and Technologists | 65           | 100%                       |

<sup>2</sup>K. R. Chowdhary, *Fundamentals of Artificial Intelligence* (Basingstoke: Springer Nature, 2020), <https://link.springer.com/book/10.1007/978-81-322-3972-7>

The top employers in the region for *Production Occupations*, by number of job postings, are shown in Exhibit 7a.

### Exhibit 7a (Below Middle-Skill) : Top Employers by Number of Job Postings (n=6)

| Employer                   | Job Postings | Percentage of Job Postings |
|----------------------------|--------------|----------------------------|
| Fat City Bar and Cafe      | 2            | 33%                        |
| PrideStaff                 | 1            | 17%                        |
| ASVWines                   | 1            | 17%                        |
| Kern River Brewing Company | 1            | 17%                        |
| Three Oaks Vineyard        | 1            | 17%                        |

The top employers in the region for *Agricultural and Food Science Technicians*, by number of job postings, are shown in Exhibit 7b.

### Exhibit 7b (Middle-Skill) : Top Employers by Number of Job Postings (n=210)

| Employer                                    | Job Postings | Percentage of Job Postings |
|---|--------------|----------------------------|
| GPAC  | 59           | 28%                        |
| State of California                         | 15           | 7%                         |
| University of California                    | 12           | 6%                         |
| Fresno Unified School District              | 7            | 3%                         |
| AgCall                                      | 7            | 3%                         |
| Wilbur-Ellis                                | 6            | 3%                         |
| J.R. Simplot Company                        | 4            | 2%                         |
| Nutrien                                     | 4            | 2%                         |
| California Department of Food & Agriculture | 4            | 2%                         |
| County of Fresno                            | 3            | 1%                         |

The top employers in the region for *Food Scientists and Technologists*, by number of job postings, are shown in Exhibit 7c.

### Exhibit 7c (Above Middle-Skill) : Top Employers by Number of Job Postings (n=65)

| Employer                 | Job Postings | Percentage of Job Postings |
|--------------------------|--------------|----------------------------|
| University of California | 15           | 23%                        |
| AppleOne                 | 10           | 15%                        |
| The Wonderful Company    | 6            | 9%                         |

| Employer                | Job Postings | Percentage of Job Postings |
|-------------------------|--------------|----------------------------|
| Lyons Magnus            | 3            | 5%                         |
| Wm Bolthouse Farms      | 3            | 5%                         |
| Ajulia Executive Search | 3            | 5%                         |
| Leprino Foods Company   | 2            | 3%                         |
| E&J Gallo Winery        | 2            | 3%                         |
| Calbee America          | 2            | 3%                         |
| Bolthouse Farms         | 2            | 3%                         |

The top specialized, common, and software skills for *Production Occupations* are listed by those most frequently mentioned in job postings (denoted in parentheses) are shown in Exhibit 8a.

### Exhibit 8a (Below Middle-Skill) : Top Skills by Number of Job Postings (n=6)

| Top Specialized Skills           | Top Soft Skills                       | Top Computer Skills             |
|----------------------------------|---------------------------------------|---------------------------------|
| Packaging and Labeling (3)       | Operations (3)                        | Inventory Management System (1) |
| Viticulture (2)                  | Detail Oriented (3)                   | Microsoft Office (1)            |
| Winemaking (2)                   | Record Keeping (2)                    | -                               |
| Enology (2)                      | Organizational Skills (2)             | -                               |
| Fermentation (2)                 | Communication (2)                     | -                               |
| Materials Transport (2)          | Leadership (2)                        | -                               |
| Chemistry (2)                    | Interpersonal Communications (2)      | -                               |
| Food Safety and Sanitation (2)   | Problem Solving (2)                   | -                               |
| Forklift Truck (2)               | Troubleshooting (Problem Solving) (2) | -                               |
| Standard Operating Procedure (2) | Verbal Communication Skills (2)       | -                               |

The top specialized, common, and software skills for *Agricultural and Food Science Technicians* are listed by those most frequently mentioned in job postings (denoted in parentheses) are shown in Exhibit 8b.

### Exhibit 8b (Middle-Skill) : Top Skills by Number of Job Postings (n=210)

| Top Specialized Skills | Top Soft Skills       | Top Computer Skills    |
|------------------------|-----------------------|------------------------|
| Agriculture (99)       | Customer Service (86) | Microsoft Excel (15)   |
| Agronomy (82)          | Sales (84)            | Microsoft Outlook (14) |

| Top Specialized Skills                        | Top Soft Skills                        | Top Computer Skills                                 |
|---|--|---|
| Fertilizers (41)                              | Operations (67)                        | Microsoft Office (13)                               |
| Food Safety and Sanitation (28)               | Communication (57)                     | Microsoft Access (9)                                |
| Sanitation (27)                               | Troubleshooting (Problem Solving) (33) | Inventory Control Systems (9)                       |
| Irrigation (Landscaping and Agriculture) (24) | Self-Motivation (32)                   | Microsoft Word (7)                                  |
| Food Services (23)                            | Management (29)                        | Geographic Information Systems (5)                  |
| Soil Science (23)                             | Professionalism (26)                   | Productivity Software (3)                           |
| Pest Control (22)                             | Research (22)                          | Customer Relationship Management (CRM) Software (2) |
| Lifting Ability (21)                          | Detail Oriented (21)                   | Slack (Software) (2)                                |

The top specialized, common, and software skills for *Food Scientists and Technologists* are listed by those most frequently mentioned in job postings (denoted in parentheses) are shown in Exhibit 8c.

#### Exhibit 8c (Above Middle-Skill) : Top Skills by Number of Job Postings (n=65)

| Top Specialized Skills          | Top Soft Skills                   | Top Computer Skills                      |
|---------------------------------|-----------------------------------|--|
| Food Science (37)               | Communication (48)                | Microsoft Office (19)                    |
| Agriculture (26)                | Innovation (43)                   | Microsoft Excel (17)                     |
| New Product Development (26)    | Research (34)                     | TraceGains (7)                           |
| Chemistry (25)                  | Management (22)                   | Microsoft PowerPoint (6)                 |
| Biology (25)                    | Sales (21)                        | Microsoft Word (3)                       |
| Shelf Life (23)                 | Presentations (21)                | Spreadsheets (3)                         |
| Food Safety and Sanitation (21) | Interpersonal Communications (20) | IBM Resource Access Control Facility (3) |
| Sensory Analysis (21)           | Microsoft Office (19)             | Reporting Tools (3)                      |
| Applied Research (19)           | Operations (19)                   | R (Programming Language) (2)             |
| Project Management (19)         | Microsoft Excel (17)              | SPSS (Statistical Software) (2)          |

## Educational Attainment:

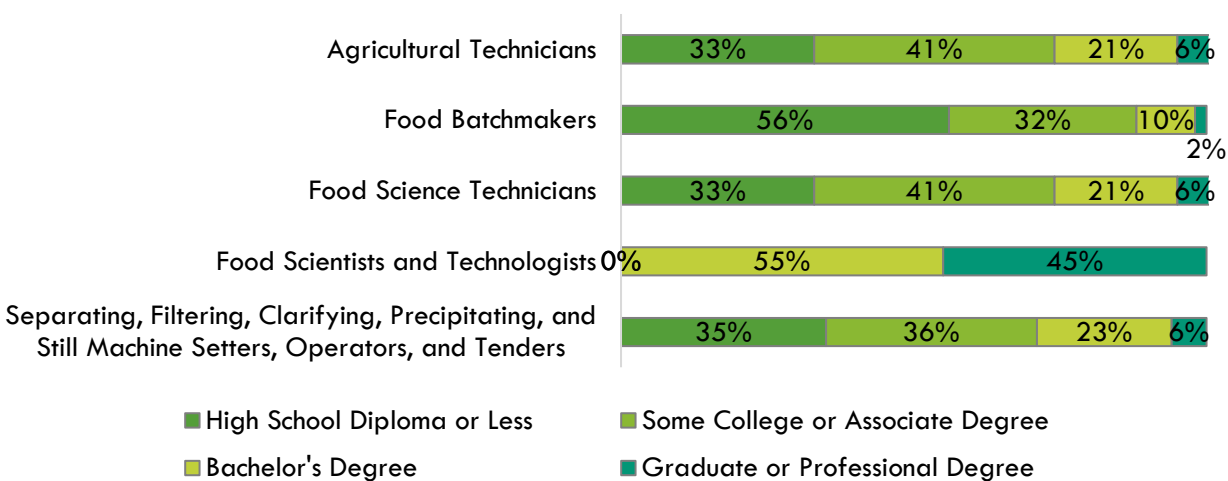
The Bureau of Labor Statistics (BLS) lists an associate degree as the typical entry-level education for *Food Batchmakers* and *Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders* and lists an associate degree as the typical entry-level education for *Agricultural Technicians* and *Food Science Technicians*. National-level educational attainment data indicates that between 0% and 41% of workers in the field have completed some college or an associate degree as their highest level of education. Exhibit 9 shows the educational attainment for the five *agricultural and food science technicians*-related occupations.

For Below Middle-Skill occupations, of the 6 online job postings, 17% (equivalent to 1 postings) of cumulative job postings for the two *agricultural and food science technicians*

For Middle-Skill occupations, of the 210 online job postings, 51% (equivalent to 108 postings) of cumulative job postings for the two *agricultural and food science technicians* listed a minimum education requirement in the SCV/SML subregion. Of the 108 postings, 52% (56) requested a bachelor's degree.

For Above Middle-Skill occupations, of the 65 online job postings, 86% (equivalent to 56 postings) of cumulative job postings for the one *agricultural and food science technicians* listed a minimum education requirement in the SCV/SML subregion. Of the 56 postings, 71% (40) requested a bachelor's degree.

### Exhibit 9: National-level Educational Attainment for Agricultural and Food Science Technicians-Related Occupations



## Educational Supply

### Community College Supply:

Community college supply shows the annual and three-year average number of awards conferred by community colleges in the programs that have historically trained for the occupations included in this report.

Community college supply also shows the annual average community college awards by type from 2022-23 through 2024-25. Of the 0 awards conferred in the SCV/SML subregion, none of these awards were for an associate degree.

## Community College Student Outcomes:

Exhibit 10 shows the Strong Workforce Program (SWP) metrics for Viticulture, Enology, and Wine Business programs in State Center Community College District (SCCCD), the SCV/SML subregion, the CVML region, and California.

Of the 1,046 viticulture, enology, and wine business program students statewide in the 2023-2024 academic year, 10% (100) attended a CVML institution. CVML region students that exited viticulture, enology, and wine business programs in the 2021-2022 academic year had greater median annual earnings (\$57,873) compared to all viticulture, enology, and wine business students in statewide in the 2022-23 academic year (\$57,256). Notably, 71% of CVML region viticulture, enology, and wine business students attained a living wage in the 2021-22 academic year, which is greater than the percentage of students who attained a living wage statewide (55%) in the 2022-23 academic year.

### Exhibit 10: Viticulture, Enology, and Wine Business (0104.00) Strong Workforce Program Metrics

| SWP Metric  | SCCCD | SCV/SML Subregion | CVML Region           | California            |
|---|-------|-------------------|-----------------------|-----------------------|
| SWP Students  | 14    | 33                | 100                   | 1,046                 |
| SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year | N/A   | 45%               | 33%                   | 22%                   |
| SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course                | N/A   | N/A               | N/A                   | 70%                   |
| SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status | N/A   | N/A               | N/A                   | 3%                    |
| SWP Students Who Transferred to a Four-Year Postsecondary Institution                     | N/A   | N/A               | N/A                   | 2%                    |
| SWP Students with a Job Closely Related to Their Field of Study                           | N/A   | N/A               | N/A                   | 65%                   |
| Median Annual Earnings for SWP Exiting Students   | N/A   | N/A               | \$57,873<br>(\$27.82) | \$57,256<br>(\$27.53) |
| Median Change in Earnings for SWP Exiting Students  | N/A   | N/A               | 13%                   | 21%                   |
| SWP Exiting Students Who Attained the Living Wage   | N/A   | N/A               | 71%                   | 55%                   |



## Non-Community College Supply:

For a comprehensive regional supply analysis, it is also important to consider the supply from other institutions in the region that provide training programs for the occupations studied in this report. This includes examining the annual and three-year average number of awards conferred by non-community college institutions in programs that have historically trained for the occupations of interest.

Between 2021 and 2024, there were no non-community college institutions in the SCV/SML subregion that conferred awards annually in related training programs.

## Appendix A: Methodology

The CVML COE prepared this report by analyzing data from occupations and education programs.

Occupational data is derived from Lightcast, a labor market analytics firm that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS) and other government agencies. Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

Using a TOP-SOC crosswalk, the CVML COE identified middle-skill jobs for which programs within these TOP codes train. Middle-skill jobs include:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

The CVML COE determined labor market supply for an occupation or SOC code by analyzing the number of program completers or awards in a related TOP or CIP code. The COE developed a “supply table” with this information, which is the source of the program supply data for this report. TOP code data comes from the California Community Colleges Chancellor's Office MIS Data Mart ([datamart.cccco.edu](http://datamart.cccco.edu)) and CIP code data comes from the Integrated Postsecondary Education Data System ([nces.ed.gov/ipeds/use-the-data](http://nces.ed.gov/ipeds/use-the-data)), also known as IPEDS. TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education in the United States and Canada. Institutions outside of the California Community College system do not use TOP codes in their reporting systems.

Data included in this analysis represent the labor market demand for relevant positions most closely related to the proposed program as expressed by the requesting college in consultation with the CVML COE. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study which can signal demand and show what employers are looking for in potential employees but is not a perfect measure of the quantity of open positions.

All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

## Appendix B: Data Sources

| Data Type   | Source  |
|---|---|
| Occupational Projections, Wages, and Job Postings   | <p>Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics and the American Community Survey. For more information, see <a href="https://lightcast.io/">https://lightcast.io/</a></p>   |
| Living Wage   | <p>The living wage is derived from the Insight Center's California Family Needs Calculator, which measures the income necessary for an individual of family to afford basic expenses. The data assesses the cost of housing, food, childcare, health care, transportation, and taxes. For more information, see: <a href="https://selfsufficiencystandard.org/California/">https://selfsufficiencystandard.org/California/</a></p> <p>Wage figures are used by the CCCCCO to calculate the percentage of students that attained the regional living wage.</p>   |
| Typical Education and Training Requirements, and Educational Attainment                       | <p>The Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. BLS uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. For more information, see <a href="https://www.bls.gov/emp/documentation/education/tech.htm">https://www.bls.gov/emp/documentation/education/tech.htm</a></p>   |
| Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences | <p>The O*NET database includes information on skills, abilities, knowledges, work activities, and interests associated with occupations. For more information, see <a href="https://www.onetonline.org/help/online/">https://www.onetonline.org/help/online/</a></p>  |
| Educational Supply  | <p>The CCCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: <a href="https://datamart.cccco.edu">https://datamart.cccco.edu</a></p> <p>The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the number of postsecondary awards earned (completions). For more information, see <a href="https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions">https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions</a></p> |
| Student Metrics and Demographics  | <p>DataVista, a statewide data system supported by the California Community Colleges Chancellor's Office and hosted by Cal-PASS Plus, provides data on progress, success, employment, and earnings outcomes for California community college students. For more information, see: <a href="https://datavista.cccco.edu/">https://datavista.cccco.edu/</a></p>   |
| Population and Occupation Demographics  | <p>The Census Bureau's American Community Survey (ACS) is the premier source for detailed population and housing information. For more information, see: <a href="https://www.census.gov/programs-surveys/acs">https://www.census.gov/programs-surveys/acs</a></p> <p>Data is sourced from IPUMS USA, a database providing access to ACS and other Census Bureau data products. For more information, see: <a href="https://usa.ipums.org/usa/about.shtml">https://usa.ipums.org/usa/about.shtml</a></p>  |

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