



Agricultural Science (TOP 0101.00)

February 2024

**Prepared by the South Central Coast Center of Excellence for
Labor Market Research**

Program Recommendation

This report was compiled by the South Central Coast¹ Center of Excellence to provide regional labor market data for the program recommendation – Agricultural Science. This report can help determine whether there is demand in the local labor market that is not being met by the supply from programs of study that align with this occupation group.

Key Findings

- In 2022, there were 12,382 jobs for Agricultural Science-related occupations in the South Central Coast Region.
- This number is expected to increase by 12% through 2027.
- Projections show approximately 1,714 annual openings in the region. An average of 61 awards were conferred in relevant programs, indicating an undersupply.
- Typical entry-level education ranges from high school diploma or equivalent for Farmers, Ranchers, and Other Agricultural Managers and First-Line Supervisors of Farming, Fishing, and Forestry Workers; to an associate degree for Agricultural Technicians.

¹ The South Central Coast Region consists of San Luis Obispo County, Santa Barbara County, Ventura County, and the following cities from North Los Angeles County: Canyon Country, Castaic, Lake Hughes, Lancaster, Littlerock, Llano, Newhall, Palmdale, Pearblossom, Santa Clarita, Stevenson Ranch, and Valencia.

Occupation Codes and Descriptions

There are three occupations in the standard occupational classification (SOC) system that were identified as related to Agricultural Science for this analysis. The occupation titles and descriptions, as well as reported job titles, are included in Exhibit 1.

Exhibit 1 – Occupation, Description, and Sample Job Titles

SOC Code	Title	Description	Sample of Reported Job Titles
11-9013	Farmers, Ranchers, and Other Agricultural Managers	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.	Aquaculture Director, Farm Manager, Farm Operations Technical Director, Fish Hatchery Manager, Greenhouse Manager, Harvesting Manager, Hatchery Manager, Hatchery Supervisor, Nursery Manager, Ranch Manager
19-4012	Agricultural Technicians	Work with agricultural scientists in plant, fiber, and animal research, or assist with animal breeding and nutrition. Set up or maintain laboratory equipment and collect samples from crops or animals. Prepare specimens or record data to assist scientists in biology or related life science experiments. Conduct tests and experiments to improve yield and quality of crops or to increase the resistance of plants and animals to disease or insects.	Agricultural Research Technician, Agricultural Research Technologist, Agricultural Technician, Laboratory Technician (Lab Tech), Research Assistant, Research Associate, Research Specialist, Research Technician, Seed Analyst

SOC Code	Title	Description	Sample of Reported Job Titles
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	Directly supervise and coordinate the activities of agricultural, forestry, aquacultural, and related workers.	Animal Research Facility Supervisor, Cattle Manager, Farm Supervisor, Fish Hatchery Manager, Harvesting Supervisor, Hatchery Manager, Logging Crew Foreman, Logging Supervisor, Pest Management Supervisor, Wildlife Manager

Source: O*NET Online

Current and Future Employment

In the South Central Coast region, the number of jobs related to Agricultural Science occupations are expected to grow 12% through 2027. The occupation – First-Line Supervisors of Farming, Fishing, and Forestry Workers – is expected to grow the most, 16%.

Exhibit 2 – Five-Year Projections for Agricultural Science Occupations in the South Central Coast Region

SOC	Occupation	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
11-9013	Farmers, Ranchers, and Other Agricultural Managers	10,268	11,419	1,152	11%	1,350
19-4012	Agricultural Technicians	241	270	29	12%	40
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	1,873	2,171	298	16%	324
		12,382	13,860	1,478	12%	1,714

Source: Lightcast™ Analyst 2023

Earnings

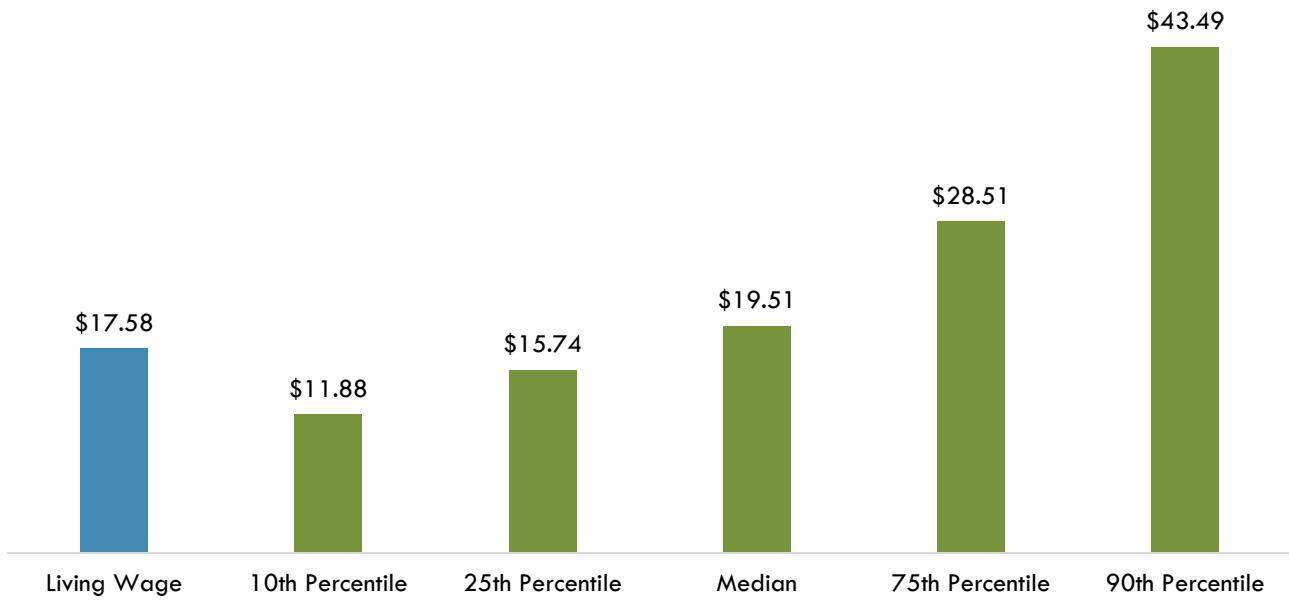
Exhibit 3 contains hourly wages and annual average earnings for these occupations. Entry-level hourly earnings are represented by the 25th percentile of wages, median hourly earnings are represented by the 50th percentile of wages, and experienced hourly earnings are represented by the 75th percentile of wages, demonstrating various levels of employment.

Exhibit 3 – Earnings for Agricultural Science Occupations in the South Central Coast Region

SOC	Occupation	Entry-Level Hourly Earnings	Median Hourly Earnings	Experienced Hourly Earnings
11-9013	Farmers, Ranchers, and Other Agricultural Managers	\$14.00	\$17.20	\$30.48
19-4012	Agricultural Technicians	\$16.53	\$20.78	\$26.98
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	\$16.69	\$20.56	\$28.07

Source: Lightcast™ Analyst 2023

Exhibit 3b – Earnings for Agricultural Science Occupations in the South Central Coast Region



Source: Family Needs Calculator (Living wage is based on Single Adult households with no children); Lightcast™ Analyst 2023

Employer Job Postings

In this research brief, real-time labor market information is used to provide a more nuanced view of the current job market, as it captures job advertisements for occupations relevant to the field of study. Employer job postings are consulted to understand who is looking for professionals in a given field, and what they are looking for in potential candidates. To identify job postings related to Agricultural Science the following standard occupational classifications were used:

- 11-9013 Farmers, Ranchers, and Other Agricultural Managers
- 19-4012 Agricultural Technicians
- 45-1011 First-Line Supervisors of Farming, Fishing, and Forestry Workers

Top Occupations

In 2023, there were 97 employer postings for occupations related to Agricultural Science.

Exhibit 4 – Top Occupations by Job Postings

SOC Code	Occupation	Job Postings, Full Year 2023
11-9013	Farmers, Ranchers, and Other Agricultural Managers	45
19-4012	Agricultural Technicians	39
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	13
	Total	97

Source: Lightcast™ Analyst 2023

Top Titles

The top job titles for employers posting ads for jobs related to Agricultural Science are listed in Exhibit 5. Agricultural Technicians is mentioned as the job title in 19 job postings.

Exhibit 5 – Job Titles

Title	Job Postings, Full Year 2023
Agricultural Technicians	19
Seed Technicians	17
Farm Supervisors	14
Agricultural Specialists	13
Farmers Market Managers	11
Organic Farmers	10
Shop Technicians	10
Farm Assistants	10

Source: Lightcast™ Analyst 2023

Top Employers

Exhibit 6 lists the major employers hiring professionals in the Agricultural Science field. The top employer posting job ads was Bayer. The top worksite cities for these occupations were San Luis Obispo, Oxnard, Santa Barbara, and Ventura.

Exhibit 6 – Top Employers

Employer	Job Postings, Full Year 2023
Bayer	16
California Public Utilities Commission	15
State of California	14
Express Employment Professionals	13
Speedling Incorporated	13
Hawx Services	13
Driscoll's	12
Santa Barbara Botanic Garden	12

Source: Lightcast™ Analyst 2023

Skills

The tables in Exhibit 7 list employers' most commonly requested skills in job postings related to Agricultural Science. Irrigation is the most sought-after specialized skill for employers. Operations was the most requested baseline skill. Microsoft Office was the most requested software and programming skill.

Exhibit 7 – Specialized Skills

Skills	Job Postings, Full Year 2023
Irrigation (Landscaping and Agriculture)	19
Agriculture	17
Marketing	16
Horticulture	15
Pesticides	14
Environmental Science	13
Fertilizer Application	13
Food Safety and Sanitation	12
Landscaping	11
Pest Control	11

Source: Lightcast™ Analyst 2023

Exhibit 7b – Baseline Skills

Skills	Job Postings, Full Year 2023
Operations	25
Management	18
Lifting Ability	17
Communication	16
Detail Oriented	16
Customer Service	15
Time Management	15
Packaging And Labeling	12
Research	10
Writing	10

Source: Lightcast™ Analyst 2023

Exhibit 7c – Software and Programming Skills

Skills	Job Postings, Full Year 2023
Microsoft Office	13
Spreadsheets	12
Inventory Management System	12
Database Software	11
Microsoft Word	11
Microsoft Excel	11
Calendaring Software	11
Microsoft Outlook	11

Source: Lightcast™ Analyst 2023

Education and Training

Exhibit 8 shows the typical entry-level education requirement for occupations of interest, along with the typical on-the-job training needed to attain competency in the occupation.

Exhibit 8 – Education and Training Requirements

SOC	Occupation	Typical entry-level education	Typical on-the-job training
11-9013	Farmers, Ranchers, and Other Agricultural Managers	High school diploma or equivalent	None
19-4012	Agricultural Technicians	Associate degree	Moderate-term on-the-job training
45-1011	First-Line Supervisors of Farming, Fishing, and Forestry Workers	High school diploma or equivalent	None

Source: Bureau of Labor Statistics Employment Projections (Educational Attainment)

Regional Completions and Openings

Between 2019 and 2022, there were 61 awards conferred in the South Central Coast region aligned with programs related to the occupations in this report.

Exhibit 9 – Three-Year Average of Awards Conferred in the Region

TOP Code	Program	3-Year Average (2019-2022)
0101.00	Agriculture Technology and Sciences, General	6
0103.00	Plant Science	21
0109.00	Horticulture	14
0112.00	Agriculture Business, Sales and Service	20
	Average	61

Source: Datamart

CCC Awards

Exhibit 10 shows the average number of awards granted by community colleges within programs historically dedicated to training for the three occupations included in this report.

Exhibit 10 – CCC Awards in the South Central Coast Region, 2019-2022 Average

CCC Programs	3-Year Average
Allan Hancock	15
Antelope Valley	6
Canyons	2
Cuesta	26
Santa Barbara	4
Ventura	8

Source: DataMart, 2023

Sources

O*Net Online, Lightcast™ Analyst 2023, MIT Living Wage Calculator, Bureau of Labor Statistics (BLS) Education Attainment, California Community Colleges Chancellor's Office Management Information Systems (MIS) Data Mart, CTE LaunchBoard, Statewide CTE Outcomes Survey, Employment Development Department Unemployment Insurance Dataset

Notes

Data included in this analysis represent the labor market demand for relevant positions most closely related to Agricultural Science. 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 and 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.