



AGRICULTURE EMPLOYER SURVEY REPORT: PEST CONTROL ADVISORS, IRRIGATION OCCUPATIONS, FOOD SAFETY OCCUPATIONS CALIFORNIA

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Research Objectives

In partnership with the Agriculture, Water, and Environmental Technology Initiative (AgWET), the Centers of Excellence (COE) conducted a study of 5 agriculture occupations in California. The study included a survey of agriculture support, production, manufacturing, and distribution employers. The purpose of the study was to assess demand for the identified occupations. Specific research objectives for this study were:

- ⇒ Determine current and projected employment levels
- ⇒ Assess education requirements for new hires
- ⇒ Identify important skills and certifications for applicants

Across California, survey respondents provided representative data for all 12 occupations. This report provides a highlight of these occupations. A comprehensive study of agriculture occupations can be found at: www.coecc.net.

Agriculture Occupations Studied

Pest Control Advisor:

Mix and apply pesticides, herbicides, or insecticides on trees, lawns or crops

Irrigation Technician:

Perform site assessments, install irrigation systems and components, troubleshoot repairs

Irrigation Specialist:

Evaluate crops to determine water availability and usage, measure salinity and nitrates, develop irrigation schedules

Food Safety/Quality Specialist:

Perform standardized inspections and tests to determine physical or chemical properties of food or beverage products

Food Safety/Quality Manager:

Research and apply methods to increase food safety, determine effective ways to process, package, preserve, store, and distribute food

Agriculture Employer Responses

In California, there are more than 31,000 employers related to the occupations studied. Three hundred twelve (312) employers provided responses to the survey. The majority of respondents were located in the Central Region. Collectively, these employers account for nearly 650 emerging jobs in the five occupations included in this report.

Region	# of Responses	% of Total
Bay	39	13%
Central	142	46%
Desert	29	9%
Los Angeles/Orange County	14	4%
North/Far North	57	18%
San Diego/Imperial	23	7%
South Coast	8	3%
Totals	312	100%

Agriculture Employment

In California, 451 new jobs are projected in the next 3 years for the occupations studied. The following table details job growth projections in the region:

Job Title	Current # of Jobs	3-Year Job Growth	% Growth
Pest Control Advisor	65	29	45%
Irrigation Technician	351	169	48%
Irrigation Specialist	182	91	50%
Food Safety/Quality Specialist	39	75	192%
Food Safety/Quality Manager	27	87	322%
Totals	664	451	68%

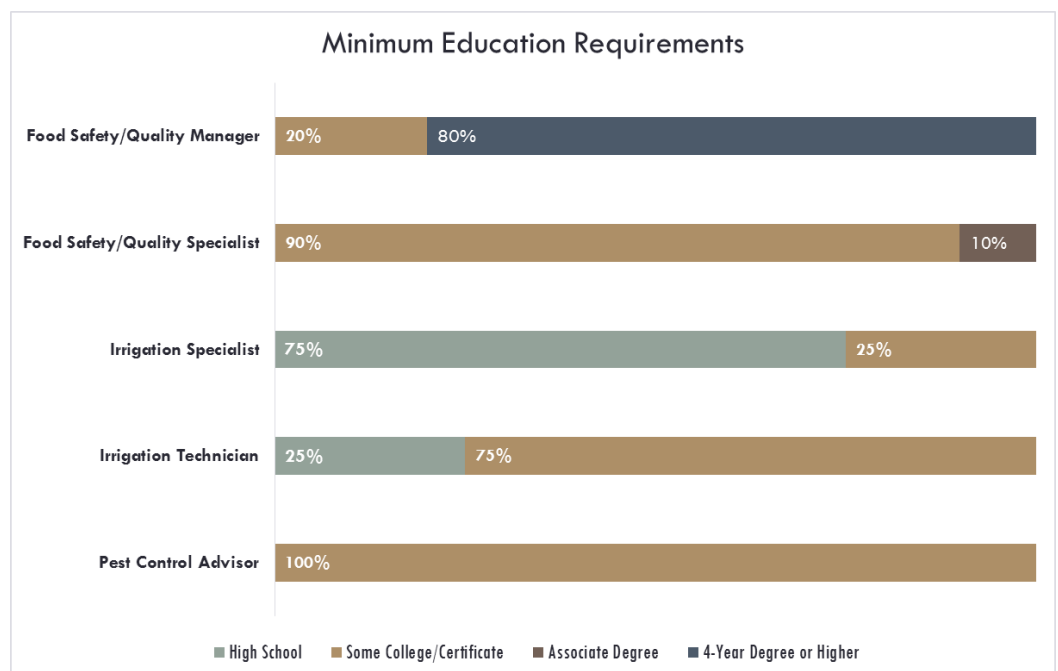
Note: number of employees is based solely on survey responses.

Employers were asked to provide a range of wages for each of the occupations studied, including entry-level, average and top hourly wages. Food safety/quality managers have the highest earnings of the five occupations studied, and all occupations provide livable wages for employees.

Job Title	Entry-Level Wages	Average Hourly Wages	Top Hourly Wages
Pest Control Advisor	\$16.83	\$18.33	\$20.50
Irrigation Technician	\$20.90	\$22.00	\$23.30
Irrigation Specialist	\$16.13	\$18.63	\$21.25
Food Safety/Quality Specialist	\$19.50	\$20.50	\$22.01
Food Safety/Quality Manager	\$25.50	\$26.50	\$28.00

Education Requirements

Employers were asked what the minimum education requirements are for each occupation. The required education levels vary substantially, possibly because these occupations are emerging and employers have not yet developed a consistent standard for education requirements. The exception is pest control advisors, which has minimum education requirements identified by the California Department of Pesticide Regulation.



Skill Requirements

For each of the five occupations studied, employers provided information related to the most important skill requirements for new hires. If a community college is developing a program for any of the occupations, this list of requirements can provide information to guide curriculum development.

Pest Control Advisor	Irrigation Technician	Irrigation Specialist	Food Safety/ Quality Specialist	Food Safety/ Quality Manager
<ul style="list-style-type: none"> • Integrated Pest Management (IPM) • Local & state reporting requirements • Familiarity with restricted materials • Cost estimating, billing, budgeting • Conventional farming practices • Knowledge of pest control and pesticide products • Personal protective equipment (PPE) • GPS and GIS 	<ul style="list-style-type: none"> • Irrigation system design • Repair and maintenance • Diesel mechanics • Industrial or electrical mechanics • Quality systems enhancement (QSE) regulations • Troubleshooting skills • GPS and GIS 	<ul style="list-style-type: none"> • Irrigation system design • Water treatment • Knowledge of SMART irrigation practices • Crop evaluation • Irrigation efficiency and scheduling • Troubleshooting • GPS and GIS 	<ul style="list-style-type: none"> • Technical knowledge of food safety • Global Food Safety Initiative (GFSI) standards • Regulatory audit procedures • Food and Drug Administration (FDA) facility requirements • Quality control standards 	<ul style="list-style-type: none"> • Federal and state regulatory requirements • Continuous quality improvement methods • Industry auditing procedures • Food processing knowledge • Hazardous waste regulations • Food safety best practices • Personal protective equipment (PPE)

Preferred Industry Certifications

Employers were asked to identify what, if any, industry certifications are preferred for new hires. For pest control advisors, the Qualified Applicator License (QAL) from the California Department of Pesticide Regulation was identified by 100% of employers. Employers identified the Certified Irrigation Technician credential offered by the California Irrigation Association as the preferred certification for both irrigation technicians and irrigation specialists. For food safety/quality specialists, the Hazard Analysis & Critical Control Points (HACCP) was the only identified certification. Employers identified three certifications that are necessary for food safety/quality managers – Certified Professional of Food Safety (CP-FS), Safe Quality Food (SQF) certificate, and Hazard Analysis & Critical Control Points (HACCP).

Important Disclaimer: All representations included in this report have been produced from survey data. Efforts have been made to qualify and validate the accuracy of the data and reported findings. Neither the Centers of Excellence (COE), the Agriculture, Water and Environmental Technology Initiative, host districts, nor the California Community Colleges Chancellor's Office are responsible for applications or decisions made by recipients of this report based upon components or recommendations contained in this report.

For More Information

For more information on this study, contact the Agriculture, Water, and Environmental Technology Initiative:
 Nancy Gutierrez, Sector Navigator
 Agriculture, Water, and Environmental Technology
 559.637.2530
 Nancy.gutierrez@reedleycollege.edu