

Position Title: Area CE Advisor in Food Safety and Organic Production

Position Description: The position focuses on improving food safety management in crop production (pre- and post-harvest) with particular emphasis on organic food production in the CA low desert region. Advisor will identify necessary actions that create an equitable playing field for underrepresented groups and strive to include and advocate for diverse communities. This position will be housed at UCCE Imperial County and provide multi-county programmatic coverage for Imperial and Riverside counties with direct impacts across Arizona and Mexico's Sonora desert region. The educational and professional requirements are a PhD in horticulture, agronomy, soil science, soil-water-plant interactions, plant pathology, food science, microbiology or closely related discipline. Experience in vegetable production, irrigated agriculture, organic agriculture, microbial safety, food safety regulations, methods of statistical analysis, and experience participating in interdisciplinary research is highly desirable.

Justification: In 2020, Imperial and Riverside counties had a combined agricultural gross production worth \$3.3 billion from a total harvested area of 688,723 acres. Vegetable production of both counties was a total gross value of \$1.3 billion. The main vegetable crops include: lettuce, spinach, tomatoes, spring mix, onions, and melons. There are more than 250 organic growers producing more than 50 different commodities. Organic crop production in Imperial County has more than doubled in the last 10 years (from 19,945 acres in 2010 to 48,2017 acres in 2020). The fresh produce industry has been impacted by recent outbreaks caused by Shiga toxin-producing *E. coli*, *Salmonella*, and *Listeria*. These outbreaks span multiple crop varieties including leafy greens, melons, onions, and tomatoes, among others. Due to the increased number of foodborne illness outbreaks traced to raw produce, the industry is under significant pressures to minimize risks to public health. Moreover, the US Food and Drug Administration (FDA) is now enforcing federal food safety regulations that apply to pre- and post-harvest produce operations. To highlight the need for food safety expertise in the desert growing region of CA, a recent 2020 outbreak caused by *Salmonella* was linked to red onions produced in the Southern San Joaquin and Imperial Valleys. Currently ANR does not have expertise in Southern California to address food safety concerns as well as provide organic growers with critical research and extension on emerging food safety hazards, practices or treatments for controlling contaminants leading to foodborne illnesses, and generally on organic production methods (nutrient, water, pest management). In order to enhance understanding of survival of foodborne microbial pathogens under various organic production systems in the low desert regions, researchers from the UC Western Center for Food Safety in collaboration with local academics have lead research and extension activities at the Desert Research and Extension Center (DREC) and surrounding regions since 2019. The 2020 UC ANR Blue Ribbon Panel recommended capitalizing on DREC resources to develop food safety research and extension agendas for the CA low desert region. The CE Advisor in Food Safety and Organic Production will lead to the expansion of food safety efforts at the DREC by serving as a direct food safety resource in the region and by facilitating research and extension efforts with collaborators across the state. This position focused on food safety and organic production systems will support two UC ANR Strategic Initiatives, Sustainable Food Production Systems and Water Quality, Quantity and Security.

Extension: This position will address specific food safety concerns of farm owners, managers, and other agricultural industry personnel through phone/email communications, office visits, and field visits to provide technical assistance. General concerns of the clientele will be addressed through meetings, workshops, publications, and online resource materials. Technical information on appropriate methods of food safety management will be provided to owners, operators and managers of commercial farm operations and other agricultural industry staff. The Advisor will identify production problems in individual commercial fields of growers, and other agricultural industry personnel by visiting the fields or by examining samples brought in by the clientele. The Advisor will prepare written information in the form of county newsletters, news

releases, and journal articles. Furthermore, the Advisor will hold field meetings, provide educational presentations, and information through the UCCE Imperial and Riverside County internet web pages to disseminate knowledge and information to all clientele.

Research: The Advisor, in cooperation with producers, industry groups and University of California personnel, will conduct experiments and field trials to improve quality and safety of perishable produce commodities, develop new or enhanced technologies and diagnostics tools that support the vegetable industry; advance the knowledge of emerging food hazards and contaminants, and improve risk assessment and risk management methods and techniques in food safety. The advisor will develop an organic vegetable research agenda looking at alternative treatments to chemical fumigations (e.g., soil solarization, biosolarization) with the goal of making these approaches more effective, predictable, flexible and safe for end users. Research results shall be presented at professional meetings and grower workshops, and published in research and trade journals, newsletters, and disseminated through other electronic means (web, blog, social media venues, etc.). Appropriate journal articles for the Advisor's publications could be *HortScience*, *HortTechnology*, *Acta Horticulturae*, *Scientia Horticulturae*, *J. of Food Protection*, *J. of the Science of Food and Agriculture*, etc.

ANR Network: There are many participation and collaborative opportunities with local Advisors and campus Specialists. Supporting and collaborating units include CE advisors, CE and AES faculty in Plant Sciences, discipline related departments/centers at UC Davis and UC Riverside (e.g. Food Science and Technology - FST, Entomology, Plant Pathology, Weed Science, Western Center for Food Safety - WCFS), UC IPM, Agriculture Sustainability Institute, Small Farms Programs, UC Organic Agriculture Institute (UC OAI), and Postharvest Technology Center. Currently, there are no food safety resources for southern CA. Because of the geographical distance, UC campus-based food safety CE scientists, provide limited assistance with issues in the low desert and surrounding counties.

Network External to ANR: The Advisor will collaborate with local colleagues, community colleges, University of AZ CE Agents and Yuma Agricultural Center scientists, USDA ARS scientists, Mexico (UABC) academics, county government and when appropriate, identify any additional networks (e.g., government agencies, policy makers, community groups, etc.) with whom the Advisor will be expected to collaborate.

Support: The CE Imperial office, located at the Desert REC, has available space and support staff for new advisors. Desert REC has laboratories and other facilities to conduct applied research and opportunities to collaborate with campus based colleagues on existing and new projects at DREC. This location will enable a new Advisor with immediate access opportunities for collaboration. DREC maintains 5 acres for organic production research.

Other support: Numerous industry and government competitive grant programs would be accessible to the Advisor. These include California vegetable commodity boards (carrot, celery, garlic/onion, leafy greens, melon, pepper) that have self-assessing research programs. The USDA and CDFA have an annual specialty crops research programs. Funding for food safety is available through numerous other funding programs.

Headquarters and Coverage Area: The position will be housed at the UCCE Imperial County office and serve Imperial and Riverside Counties.

Developed and proposed by: This position was developed by Desert REC Director, after consultation with members from the UCCE county directors in Imperial and Riverside, UC OAI, UCD FST Dept. and WCFS

and several ANR program teams. External stake holders are the Imperial County Farm Bureau, Imperial Valley Vegetable Growers Association, Imperial County Agricultural Commissioner's office, University of Baja California and the University of Arizona.