Israel Joukhadar, PhD
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EDUCATION

- **Doctor of Philosophy Plant and Environmental Sciences, Horticulture,** August 2015-May 2019
    - Dissertation title: "Comparative Mechanical Harvest Efficiency of Six New Mexico Pod-Type Green Chile (*Capsicum annuum*) Cultivars"
      Advisor: Dr. Stephanie Walker, New Mexico State University, Las Cruces, NM
- **Masters of Plant and Environmental Sciences**, minors in Applied Experimental Statistics, Soils, and Plant Science, August 2010 – May 2013
    - Thesis title: "Effect of Deficit Irrigation on Landrace and Commercial Chile *capsicum annuum L.* Cultivars"
      Advisor: Dr. Stephanie Walker, New Mexico State University, Las Cruces, NM
- **Bachelors of Arts in Secondary Education**, December 2001 – December 2006
  Arizona State University, Tempe, AZ

PROFESSIONAL EXPERIENCE

Assistant Professor, New Mexico State University, October 2025-current

Senior Research Scientist, New Mexico State University, January 2024 – September 2025

- Mentored and trained graduate students in all aspects of research design, data collection and analysis, and publication of results
- Conducted extensive research on vegetable production in arid lands under open field, agrivoltaic, and protected cultivation systems
- Explored various aspects of vegetable production across different climates, focusing on saline tolerance, irrigation regimes, the breeding of new cultivars, field and controlled environment propagation and cultivation methods, mechanical harvest, and overall plant physiology
- Led a team of interdisciplinary scientists in design and installation of four large scale agrivoltaic research sites throughout New Mexico at university research centers
- Collaborated with and managed large interdisciplinary teams to submit large pool grant proposals to various funding sources such as USDA and NSF
- Authored a diverse array of peer-reviewed and extension publications, contributing valuable insights and findings to the field
- Developed and delivered presentations on a wide range of topics for both academic and community audiences
- Prepared and plan to teach undergraduate and graduate course in plant nutrition, incorporating interactive lectures and hands-on learning experiences
- Delivered guest lectures for undergraduate and graduate crop production courses and led tours featuring student-driven discussions

Vegetable Program Manager, New Mexico State University, July 2015 – January 2024

- Designed and managed large scale research experiments on agrivoltaics, salinity management, sustainable agricultural crop production, vegetable breeding, mechanical harvest, greenhouse and controlled environment production
- Coauthored grant proposals of different magnitudes for foundation, federal, state, and international grant-levels
- Formulated comprehensive experimental designs and protocols for all technical aspects of research, and conducted thorough data collection and analysis using advanced statistical software
- Facilitated teams of over 15 people to complete field research, including data collection and analysis
- Daily management of employees who were responsible for collecting field data, performing lab work, and cultivating and maintaining experimental plots
- Supported graduate students reach their experimental objectives by coordinating projects, data collection, and/or providing technical support
- Collaborated with teams of researchers, industry partners, and federal agencies to design vegetable arid land, water consumption, saline production, mechanical harvest, and agrivoltaic research
- Authored reports and peer reviewed publications describing major research study results and conclusions on various research projects
- Created and presented presentations on wide range of topics for both academic and community audiences
- Organized and executed over 50 field days, workshops, and farm tours for communities throughout New Mexico

Vegetable Production Specialist Consultant, Plant Production and Protection Division, Food and Agriculture Organization of the United Nations (FAO), January 2022- January 2025

- Delivered presentations on conference panels to provide controlled environment production information to diverse audiences
- Authored peer reviewed articles on enhancing productivity of small-scale farmers through controlled environment production
- Provided technical guidance and feedback on controlled environment project requests and technical designs from international FAO teams
- Created and refined controlled environment production guidelines for FAO initiatives
- Advised program managers on current projects, offering solutions for challenges such as saline irrigation and soil management, controlled environment renovation designs, stakeholder engagement, and accurate resource allocation
- Participated in the proposal development for large-scale FAO international controlled environment projects alongside teams comprising 20 or more members

Horticulture Technician, Purdue University, October 2014 – July 2015

- Oversaw experiments involving winter production of vegetables in two unheated greenhouses (over 5000 sq ft) at a research farm in northern Indiana
- Oversaw all aspects of greenhouse production, including environmental control, irrigation and fertilization management, disease and pest identification and control, seeding, weed control, and harvest.

- Collaborated on the development of research projects centered around greenhouses, encompassing variety trials, successive planting, and enhancement of soil health
- Contributed to the development of research articles describing greenhouse production
- Played an active role in organizing, planning, and executing regional gatherings and symposiums on greenhouse production for vegetable growers in the area

Agricultural Extension Specialist, Afghanistan Agricultural Extension Project,
July 2013 – October 2014, Purdue University, Herat, Afghanistan

- Orchestrated and conducted technical and practical trainings on farm and land water management, greenhouse construction and cultivation, soil amendments, basic cultivation techniques, post-harvest practices, and disease and pest identification and control
- Planned and developed the Model Teaching Farm program on rural arid land outside of Herat, Afghanistan where applied agriculture trials were conducted to show beneficiaries different cultivation methods
- Coordinated creative solutions for agricultural and land degradation obstacles with stakeholders, such as government officials and community members, by participating in and leading working group meetings
- Independently oversaw project planning and expenses working with five Afghan employees and coordinated all program activities with all Afghan Department of Agriculture staff
- Accounted for, approved, and reported all daily operating expenses and ensured enforcement of USDA operating regulations
- Composed and submitted weekly USDA reports describing activities, program performance, and success stories indicating impact data
- Initiated and developed evaluation template to measure project rate of success
- Provided agricultural and land restoration technical advice for national staff, beneficiaries, and other stakeholders on a daily basis
- Wrote annual work plan for different projects including farmer field schools, Purdue Improved Crop Storage Technology (PICS Bags), Women in Agriculture Programming, Provincial Model Teaching Farm including Controlled Environment Agriculture, and Extension Working Groups

Research Assistant, EPSCoR (Experimental Program to Stimulate Competitive Research) Climate Change Research as Applied to Horticultural and Water Science in Northern New Mexico
August 2010 – June 2013, New Mexico State University, Las Cruces, NM

- Engineered and implemented a water use efficiency project using specific irrigation methods to evaluate overall yield response to deficit irrigation practices
- Oversaw and maintained all research plots and ensured accurate data collection
- Installed, maintained, downloaded, and analyzed over 20 environmental sensors
- Collected all field data and performed laboratory tests such as pigment and organic compound extraction, soil pH and texture, and soil microorganism and nutrient content
- Analyzed all collected data using statistical software and authored peer reviewed article to publish results

Arid Land Agricultural Supervisor, Developing Innovations in Navajo Education Incorporated
September 2009 – August 2010, Navajo Reservation, Northern Arizona

- Trained over 50 rural Navajo farmers, ranch, and landowners on low-tech hoop house installation and cultivation, drip and gravity fed irrigation, saline irrigation management with soil amendment practices
- Developed and managed five community farm training sites with coordination of local leaders in remote arid agricultural locations that were used to train communities on gravity and drip irrigation systems, hoop house construction, best cultivation practices, and land restoration techniques
- Assembled USDA annual reports that summarized program activities and overall impact

Peace Corps Volunteer, Capacity Building for Beneficiaries
March 2007 – September 2009, Bupadhengo, Uganda, East Africa

- Completed a needs assessment survey with 230 village participants
- Trained over 200 village subsistence farmers on soil amendment practices to reduce erosion, and best cultivation and post-harvest techniques to increase yield and quality of produce
- Obtained a grant from Peace Corps for kitchen garden program aimed at training youth to teach and help high risk and low mobility HIV/AIDS patients to grow small, low input and labor kitchen gardens to increase overall nutrient availability

SPECIAL COURSES AND AWARDS

- Ag Tech Workshop at UC Davis, Davis, CA. Dec. 2024.
- Controlled Environment Short Course, Greenhouse Crop Production and Engineering Design, University of Arizona, Tucson, AZ. March 2018.
- First place for best research poster in February 2013 International Chile Conference, "Comparative Effects of Deficit Irrigation in Landrace and Commercial Chile (*Capsicum annuum*) Cultivars", Las Cruces, NM.
- Honor Award of Excellence from the United States Department of Agriculture for agricultural extension and research in Afghanistan, November 2014.
- Third place in oral competition in July 2016 Western Society of Crop Science regional conference, "Optimum plant growth habit for harvest efficiency with Etgar picker: A comparison of six green (*Capsicum annuum*) cultivars".
- Awarded travel grant for American Society for Horticultural Science conference in August 2016, Atlanta, GA.
- New Mexico Crop Association Scholarship in 2011 and 2016.
- Governor's Scholarship in 2017 from New Mexico Rotary Club.
- Dean's Award of Excellence for Graduate Students in May 2019.

PUBLICATIONS

- **I. Joukhadar**, J. Afroze, P. Xu, B. Smithers, M. Acevedo, and S. Walker. 2026. Irrigation Water Quality and Soil Amendments Enhance Faba Bean (Vicia faba) Production in Salinity-affected Regions. HortTechnology. 36:88-95.

- S. Walker and **I. Joukhadar**. 2026. Growing Zones and Planting Information for Home Vegetable Gardens in New Mexico. New Mexico State University Cooperative Extension Service. Circular 457-B.
- S. Walker and **I. Joukhadar**. 2025. Home vegetable gardening in New Mexico. New Mexico State University Cooperative Extension Service. Circular 457.
- D. Coon, **I. Joukhadar**, S. Walker. 2025. Release of NuMex PWB. HortScience.
- S. Walker, D. Coon, and **I. Joukhadar**. 2025. Growing Chiles in New Mexico. New Mexico State University. Cooperative Extension Service. Guide H-230.
- M. Thompson, **I. Joukhadar**, S. Walker, C. Havlik, and D. VanLeeuwen. 2025. Transplanting root-bound tomato starts using methods with high levels of root disturbance offers no advantages. HortTechnology.
- **I. Joukhadar**, M. Estrada, C. Velasco-Cruz, D.Coon, O. Lavrova, M. Thompson, I. Guzman, and S. Walker. 2025. Impact of agrivoltaic shade on beet curly top virus and yield in chile pepper (*Capsicum annum*).
- **I. Joukhadar**, F. Ortega, C. Velasco-Cruz, D. Barchenger, T. Hill, A. Van Deynze, and S. Walker. 2024. Correlations among New Mexico pod-type green chile (Capsicum annuum) fruit morphology characteristics with destemming force. Crop Science, 1–11.
- **I. Joukhadar**, C. Havlik, and S. Walker. 2024. Effect of Plant Density on Mechanical Harvest Efficiency of New Mexico Pod-type Green Chile Pepper. HortTechnology. 34:181-186.
- **I. Joukhadar**, B. Tonnessen, D. Coon, S. Walker. 2023. Performance of heat-tolerant lettuce cultivars in southern New Mexico in 2020-21. HortTechnology. 33: 313-316.
- Hill, T., V. Cassibba, **I. Joukhadar**, B. Tonnessen, C. Havlik, et al. 2023. Genetics of destemming in pepper: A step towards mechanical harvesting. Frontiers in Genetics.
- Medina Navarro, M., R. Kahane, L. Bellido, **I. Joukhadar**, J. Rowe, E. Nsimadala, A. Pineda, and T. Martin. 2022. How to adapt innovative technologies and develop resilient horticultural systems for small-scale farmers? Acta Horticulturae 1355: 469-472.
- Walker, S., L. Garvin, B. Tonnessen, **I. Joukhadar**. Vegetable Seed Saving for Home Gardeners and Small-scale Farmers. Guide H-262.
- Walker, S., P. Funk, **I. Joukhadar**, T. Place, C. Havlik, B. Tonnessen. 2021. 'NuMex-Odyssey', a New Mexico-type Green Chile Pepper for Mechanical Harvest. HortScience.
- Walker, S., Dickerson, G., and **I. Joukhadar**. Greenhouse Vegetable Production. New Mexico State University Cooperative Extension Service. Circular 556.
- **Joukhadar, I.** and S. Walker. How to Conquer the Most Common Chili Pepper Pests in the Greenhouse. Greenhouse Grower. 13 Feb. 2020.
- **Joukhadar, I.** and S. Walker. 2020. Effect of Stand Reduction at Different Growth Stages on Yield of Paprika-Type Chile Pepper. Horticulturae. 6: 16-20.
- **Joukhadar, I.**, S. Walker, and P. Funk. 2020. Comparative Mechanical Harvest Efficiency of Six New Mexico Pod-type Green Chile Pepper Cultivars. HortTechnology. 28: 310-318.
- Maynard, E., **I. Calsoyas**, and J. Malecki. 2017. Potassium Applications and Yellow Shoulder Disorder of Tomatoes in High Tunnels. Midwest Vegetable Reports. Paper 105.
- **Joukhadar, I.** and S. Walker. 2017. Evaluation of a New Mexico Landrace and Two Commercial Chile (*Capsicum annuum*) Cultivars under Four Furrow Irrigation Schedules. Horticulturae. 4: 1-11.

- Maynard, E. and **I. Calsoyas**. 2016. Sugar-enhanced and Synergistic Sweet Corn Cultivar Evaluation for Northern Indiana, 2015. Purdue Fruit and Vegetable Research Reports. Paper 65.
- Maynard, E. and **I. Calsoyas**. 2016. Supersweet Sweet Corn Cultivar Evaluation for Northern Indiana, 2015. Purdue Fruit and Vegetable Research Reports. Paper 64.
- Maynard, E. and **I. Calsoyas**. 2016. Mini- and Heirloom Sweet Pepper Variety Performance in High Tunnels, 2015. Purdue Fruit and Vegetable Research Reports. Paper 63.

PROFESSIONAL MEMBERSHIPS

- International Society for Horticultural Sciences, American Society for Horticultural Science

SERVICE AND VOLUNTEER ACTIVITIES

- Reviewer for HortTechnology, Hort Science, and *Horticulturae*. Grant review panels for National Institute of Food and Agriculture and USDA.